

# THE PLANNER'S NOTEBOOK

*A compendium of information on town  
and country planning and related  
subjects*

*Edited by*

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# NATIONAL INCOME

## Percentage of national income taken by taxation

	<i>Percentage of national income mobilised for public use by taxation</i>	<i>Net receipt by Exchequer per head of whole population</i>
1913-14	6-8	£1 16s. direct, and £1 16s. indirect
1925-26	17-19	
1937-38		£17 16s. (total)
1941	31	£25 2s. direct, £15 15s. indirect
	Percentage of tax borne by under £500 incomes	Number of direct taxpayers
1938-39	7.4	3,800,000
1941-42	32.4	10,500,000

*The Times 20th Mar. 1943 (S)*

## War-time income, taxation, and expenditure

The national income had increased from £4,604 million in 1938 to £8,172 million in 1943—by 77 per cent. Part of this increase reflects a rise in prices and wages, i.e. depreciation of money values, but an equal part is due to the full mobilisation of resources. Improved industrial efficiency also played a part. It is probably not too sanguine to conclude that, of the 77 per cent. increase, some 35-40 per cent. is caused by the rise in prices and wages while the other half of the increase results from increased production.

The daily expenditure of the central Government rose from £9.2 million in 1940 to £14 million in 1942 and £15.8 million in 1943. Of this last amount only £2 million a day went on the usual objects of Government expenditure (including interest on the National Debt); all the rest was spent on the war.

In 1940, 37.7 per cent. of central government expenditure was raised by taxation. In 1943, 49.7 per cent. of a larger total was so raised.

Between 1938 and 1943 the amount of direct taxes paid increased by 250 per cent. and the amount of indirect taxes more than doubled.

From the aggregate of private incomes (including impersonal in-

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come) the proportion taken by taxes has risen steadily from 23 per cent. in 1938 to 36 per cent. in 1943.

In 1938, personal savings amounted to £158 million, or 3·3 per cent. of personal income; in 1943 they were £1,407 million or about 18 per cent. of personal income.

The White Paper shows the distribution of private income at different levels for 1938 and 1942. In 1942 many more people received (but did not retain) higher incomes than in 1938. The number of incomes between £250 and £500 a year increased from 1,745,000 in 1938 to 5,500,000 in 1942, while the £500-£1,000 group expanded from 500,000 to 1,110,000 and the £1,000-£2,000 group from 195,000 to 295,000. The following table gives an approximate estimate of the distribution of incomes in the two years before and after payment of income tax and surtax:

<i>Gross Income</i>	<i>Distribution of Income</i>			
	<i>Before Tax</i>		<i>After Tax</i>	
	<i>1938</i>	<i>1942</i>	<i>1938</i>	<i>1942</i>
	%	%	%	%
Under £250 - - -	53·2	41·6	57·7	51·3
£250-£500 - - -	11·8	23·0	12·5	24·9
£500-£1,000 - - -	6·9	9·2	6·7	8·4
£1,000-£2,000 - - -	5·4	5·1	4·9	4·0
£2,000-£10,000 - - -	7·2	4·6	5·5	2·8
£10,000 and over - - -	3·1	2·1	1·8	0·6
Other private incomes -	12·1	14·4	10·9	8·0
Total private income -	100·0	100·0	100·0	100·0

The general effect of war-time increases in direct taxation is to leave the average taxpayer in the £250-£500 group with about 12 per cent. less net income in 1942 than in 1938. The reductions for the £500-£1,000, £1,000-£2,000 and £2,000-£10,000 groups were about 20, 26 and 33 per cent. respectively.

Expenditure on consumption (allowing for indirect taxes and subsidies) was about 12 per cent. higher in 1943 than in 1938 and the real amount of goods and services was about 21 per cent. less than in 1938.

## NATIONAL INCOME

The effects of war-time restrictions and taxation are indicated in the following table of the nation's household budget:

	<i>Personal Expenditure</i>		<i>Proportional Expenditure</i>	
	1938	1943	1938	1943
	£m.	£m.	£m.	£m.
Food - - - -	1,198	1,264	29.4	25.4
Drink and tobacco - -	442	1,053	10.9	21.1
Rent, rates and water charges - - - -	491	510	12.1	10.2
Fuel and light - - -	203	240	5.0	4.8
Clothing - - - -	447	447	11.0	9.0
All other items - - -	1,291	1,467	31.6	29.5
Personal expenditure on consumption at market prices - - - -	4,072	4,981	100.0	100.0

*Source: An Analysis of the Sources of War Finance and Estimates of National Income and Expenditure in the Years 1938 to 1943. Cmd. 6520. April 1944.*

*The Times 6th May 1944 (S)*

## NATIONAL PARKS

### Aims and administration of national parks

National parks should be for all sections of the population who want to refresh their minds and spirits and exercise their bodies in a peaceful setting of natural beauty—it is no concern of National Parks to cater for those who prefer a town setting for their holidays.

Their cost should be met from national funds and arrangements for preservation, access and facilities should be centrally directed and supervised. It is necessary that legislation on the lines of the White Paper on the Control of Land Use should have been enacted before any scheme of National Parks is faced, in operation, with the problems of compensation under the existing law.

Besides building development other activities must be subject to control by the National Parks authority—such as quarrying and

mining, afforestation, construction of dams and reservoirs, electricity distribution, military ranges and road and bridge works. Many of these works, arising from the enterprise of public or semi-public bodies, have not been in the past subject to effective planning control.

These negative measures of control must be balanced by positive measures to recreate and enrich the scenic beauty. Many of the best features of the countryside would not exist at all without farming, forestry and sport, and would quickly decay or disappear unless these uses are maintained.

Shacks, rubbish dumps, all advertisements, the few war-factories and all defence works should be removed as soon as possible.

Every National Park will require a considerable programme of constructional work. Much new accommodation for visitors will be needed—particularly of the cheaper kinds and including Youth Hostels, small hutted camps and camping grounds. Work will also be needed on sign-posts, footpaths, minimum road improvements and a programme of work in the interest of the farmers and other resident populations. A large proportion of farm buildings and cottages are in need of reconditioning and improvement.

It is not suggested that the National Parks authority should take full responsibility for all these things which will need doing. A small proportion they may wish to, or have to, execute themselves; the remainder they will get done by encouraging and helping suitable entrepreneurs, including authorities, or can expect public or private enterprises to provide without stimulation or help. But in one respect the National Parks authority must be concerned with every piece of constructional work, however small, namely to ensure that it is well and harmoniously sited and designed. Control is not enough: it may stop bad work but it cannot secure good work. Therefore the authority must give positive and helpful guidance, and might employ and encourage others to employ only those planners, architects, engineers whose skill and appreciation of landscape beauty can be relied on.

Farming should be maintained and, in most National Park areas, improved and given generous scope for changes necessary to its efficiency.

Access and facilities for holiday-making and open-air recreation should be amply provided. The demand for an open-air holiday has grown enormously and will continue to grow but will not become universal. Many people of all classes prefer holidays in a town setting at resorts where cinemas, dance-cafes, bathing pools and many other facilities are amply provided. Any attempt to establish such facilities in National Parks should be firmly resisted. Marginal

cases will be the most difficult to resist. A commercial holiday camp for 3,000 can probably be dismissed on sight; a proposal for a non-profit-making camp for 300 is a much more difficult problem. As the number of visitors grow some facilities for indoor entertainment and more concentrated forms of outdoor recreation will be needed, but such things should only be allowed in or near larger towns or villages and after careful scrutiny.

Motorists' requirements are another marginal case. Some road improvements will be needed but not endless widenings to allow increased speeds and ever heavier traffic. I believe that the only sound policy is segregation, with graduated improvements of routes left open to motor traffic and no improvement and minimum maintenance of roads reserved for walkers, cyclists, and horse-drawn traffic, and closed for motor vehicles other than for the service of farms. The walker's share of roads in National Parks should be a generous one. The most valuable and often the only necessary specific provision for motor tourists is the creation of a recognised 'scenic circuit' road, roughly following the boundary of the Park and connected by existing branch roads to centres within it.

Accommodation for visitors will have to be increased. Non-profit-making organisations will do a great deal towards meeting this need, and the Parks authority's best assistance will be in finding and acquiring suitable buildings or sites and letting them to appropriate organisations. In the long run it may be that almost too much accommodation may be proposed.

The National Parks authority will have to take a more direct responsibility to provide footpaths and access for rambling. Broadly it appears desirable that rambling at will should be allowed over all uncultivated land and plenty of footpaths should be provided through all cultivated land.

By Section 193 of the Law of Property Act, 1925, the public has full rights of access for air and exercise (subject to certain regulations) over all commons wholly or partly within urban districts, and over such commons in rural districts as the owners put under the Section by deed. Thus all commons in National Parks could be open to the public and the total extent which has been so opened is considerable.

Estimates of the extent and distribution of common land can only be approximate as accurate information is not available. The total common land in England and Wales is about 2,500 sq. miles, of which about 750 sq. miles fall in the ten suggested National Parks in Division A [see p. 188] and a further 750 sq. miles in the twelve reserve National Parks in Division B [see p. 189]. Of the total of about 1,500 sq. miles, I estimate that about 165 sq. miles, or 11 per cent., are 'regulated'. Over the balance, ramblers have no legal right



of access except along public rights-of-way; but trespass which did not involve damage almost certainly could not be punished and the custom or privilege of access is generally of long and unchallenged standing.

The first and easiest step for the National Parks authority will be to get all common land in National Parks fully and permanently 'opened' under regulations which will impose no restrictions on the well-behaved Rambler.

Ensuring access to enclosed land should be easy in some areas (notably in the Lakes where fell-land, common or enclosed, is by long custom open to all), and difficult in others where owners object to access on the grounds of protecting sporting rights or ensuring purity of water supply.

There is no conflict between farming and rambling interests which cannot be solved by guidance of the ignorant and some safeguards against wanton damage.

A thorough recasting of footpath law and administration is needed followed by a campaign to provide ample public footpaths in all districts. Recommendations in the Scott Report cover a good deal but not the whole of the ground. The first task in National Parks areas is to settle the public right-of-way status of all existing footpaths, the second is to plan and carry out additions and adjustments and the third is to equip and maintain footpaths in a proper manner.

The last two main requirements of National Parks are those concerned with conservation of wild life and places and buildings of scientific, historic and architectural value.

Interesting species of flora and fauna are so widely spread that their conservation as a national objective cannot be confined to specific Nature Reserves—still less to those as can be conveniently situated in National Parks. Such conservation can only be secured by a series of measures which might desirably be directed by a permanent Wild Life Advisory Council. Such measures would include the provision of Nature Reserves, and some of these would probably be situated in National Parks. In my view, the National Parks authority should administer National Nature Reserves where these come within National Parks and preferably those elsewhere as well.

The general system for the protection and care of buildings, remains and sites of historic or architectural interest by the Ministries of Works and Town and Country Planning and the local authorities should function in National Parks as elsewhere. But the National Parks authority should collaborate in a general watchfulness, be entitled to make recommendations and make special arrangements for collaboration in particular cases—as with the Ancient Monuments service of the Ministry of Works in the Roman Wall area.

## NATIONAL PARKS

I do not regard the public acquisition of all or of any great part of the land in National Parks as in any way essential. For the broad purposes of planning and agriculture, public ownership is no more and no less desirable in National Parks than in the rest of the country. Public acquisition is, however, an indispensable reserve weapon for use wherever methods of control seem likely to be inadequate or unduly expensive. Occasions where such powers might be needed include the removal of existing disfigurements, reclamations and improvements, and sites for hostels and camping grounds.

It is also suggested that the National Parks authority should pursue a steady policy of buying by agreement agricultural land in Park areas as opportunities occur.

It is essential in the interests of both parties and the nation, that the policies of the Forestry Commission and the National Parks authority should be closely co-ordinated. This is necessary both because the two authorities are potentially rival claimants for large areas of upland and because the Forestry Commission, by its establishment of 'National Forest Parks' in certain areas, has provided some of the facilities which National Parks seek to provide.

The National Trust holds many properties in potential National Park areas. There will be no possible need for the authority to interfere with the Trust's ownership and every reason for it to welcome increases therein. Nevertheless, it is probable that when it is known that certain areas are to become National Parks the main efforts of the Trust and its supporters will be turned towards acquiring properties or covenants in other areas.

*Ministry of Town and Country Planning. Dower, John.*  
*National Parks in England and Wales. Cmd. 6628 1945*  
*paras. 13-82 (S)*

### Definition of national parks and proposals for England and Wales

A National Park may be defined, in application to Gt. Britain, as an extensive area of beautiful and relatively wild country in which, for the nation's benefit and by appropriate national action (a) the characteristic landscape beauty is strictly preserved, (b) access and facilities for public open-air enjoyment are amply provided, (c) wild life and buildings and places of architectural and historic interest are suitably protected while (d) established farming use is effectively maintained. All the requirements and qualifications of this definition are important.

Potential National Park areas amounting to about 8,000 sq. miles

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exist in England and Wales. This is more than is needed for initial or early establishment as National Parks and may be more than will ever be needed, but the whole should be safeguarded as a reserve for possible future National Parks and over it the National Parks authority should hold a 'watching brief'.

The task of choosing and delimiting the areas for National Parks or for the National Park reserves will clearly not be easy. It is suggested that all choices and boundaries should be subject to the approval of the Minister of Town and Country Planning, who would be responsible for them to Parliament.

The precise determination of National Parks should follow and not precede determination of National Parks policy. Nevertheless, it seems desirable that I should give preliminary lists covering all the areas which it will probably be necessary to consider, sooner or later, when National Parks are chosen. There is no suggestion that anything like the whole of these areas should ever become National Parks: on the contrary more than half of the areas are, in my opinion, unsuitable.

The preliminary lists are given in three divisions: (A) *Suggested National Parks*, i.e. areas considered most suitable for establishment during, say, the first five years; (B) *Reserves for possible future National Parks*, some of which it will be desirable to establish as National Parks at a later stage; (C) *Other Amenity Areas not suggested as National Parks* which deserve special attention to safeguard their beauty, farming use, wild life and facilities for open-air recreation. It may be that some of these should be given a special status as county or regional 'Parks' or as 'National Forest Parks' where the Forestry Commission has large holdings, or as 'Nature Reserves' where they are areas of special value for their flora or fauna.

### *Division A: Suggested National Parks*

	<i>Approx. sq. miles</i>
1. The Lake District - - - - -	860
2. Snowdonia - - - - -	320
3. Dartmoor - - - - -	310
4. The Peak District and Dovedale - - - - -	530
5. Pembroke Coast - - - - -	100
6. Cornish Coast (selected parts) - - - - -	180
	— 2,300
7. Craven Pennines (Wharfe, Aire and Ribble) - - - - -	380
8. Black Mountains and Brecon Beacons - - - - -	470

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9. Exmoor and North Devon Coast	-	-	-	280
10. The Roman Wall	-	-	-	170
				— 1,300
				<hr/> 3,600

The first six areas of this division are suggested as a first instalment; and the remaining four as a second, and early instalment. The selected parts of the Cornish Coast (No. 6) consist of (a) the Land's End and Lizard peninsulas and (b) the stretch from Padstow Bay northwards round Hartland to near Westward Ho!—the northern part of this being in Devon.

This choice is personal but is probably in close accord with informed opinion. Whether or not it is followed when the official choice is made, I would stress the importance of starting with several National Parks of ample size, not with one or two Parks only nor—so far as inland Parks are concerned—with areas of less than 250 sq. miles each. If the Parks in the first instalment are too few or too small, the concentration of visitors attracted by the publicity attending their establishment will have serious ill effects and result in discredit to the National Parks administration.

## *Division B: Reserves for possible future National Parks*

	<i>Approx. sq. miles</i>
1. The Broads - - - - -	120
2. North York Moors and Coast - - - - -	460
3. Dorset Coast and Heaths - - - - -	200
4. Berkshire and Marlborough Downs - - - - -	240
	— 1,020
5. North-East Cheviots (Till and Coquet) - - - - -	300
6. North Pennines (South Tyne, Wear and Tees) - - - - -	640
7. Swaledale Pennines (with part of Wensleydale) - - - - -	240
8. Howgill Fells (Upper Lune) - - - - -	280
	— 1,460
9. Merioneth Coast and Mountains (including Berwyns) - - - - -	660
10. Plynlimon - - - - -	400
11. Radnor and Clun Forests - - - - -	420
12. Elenith Mountains (Elan, Towy and Cothi) - - - - -	440
	— 1,920
	<hr/> 4,400

These areas should in my view have priority of consideration for

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a third instalment of National Parks except in so far as they can be satisfactorily preserved by county or regional action. The Broads in particular are an area of unique waterway and fenland which should be conserved and opened fully to such public enjoyment as is consistent with conservation. But there are many complications of drainage, navigation, misuse and disfigurements; and the requirements differ materially from those of a regular National Park.

### *Division C: Other amenity areas not suggested as National Parks*

#### *Northern*

Northumberland Coast (part)  
South-West Cheviots  
Bowland Fells  
Nidderdale Pennines  
Industrial Pennines  
Charnwood Forest  
Cannock Chase  
Delamere Forest

#### *South-Western*

The Cotswolds  
The Mendips  
The Quantocks  
Cornish Coast (remaining parts)  
South Devon Coast  
Blackdown Hills  
Dorset Downs

#### *Western (Wales and Welsh Marches)*

Anglesey Coast  
Lleyn Coast  
Denbigh Moors  
Clwydian Range  
Cardigan Coast  
Gower  
The Eppynt  
South Shropshire Hills  
Malvern Hills  
Forest of Dean and Lower Wye

#### *Southern and Eastern*

The New Forest  
Hampshire Downs and Hind-head  
South Downs  
Forest Ridges (Horsham to Battle)  
The Chilterns  
Breckland  
Suffolk Heath and Coast  
North Norfolk Coast

It may be thought that some of this last group should have been placed in Division A or B in order to secure a more even distribution of National Parks over the country. The answer to this is that the wilder country most suitable for National Parks is predominantly in the north, west and south-west. But the New Forest and the South Downs would have been included in Divisions A or B had I not been reasonably satisfied that they would in future be adequately dealt with by other agencies, although both have in the past suffered from bad development. The Forestry Commission which will safeguard the New Forest has also a major interest in five of the other areas in Division C.

It is desirable that National Parks should be established in Scotland *pari passu* with England and Wales and at a rate of not less than

## NATIONAL PARKS

1 to 3. The mountain masses of the Highlands are far larger and more continuously wild than any corresponding areas south of the Border, and two Highland areas of ample size should be established simultaneously with the first six English and Welsh Parks. This would provide a further insurance against the ill-effects of starting with too small a number or extent of National Parks.

*Ministry of Town and Country Planning. Dower, John.  
National Parks in England and Wales. Cmd. 6628 1945  
paras. 4-12 (S)*

### National parks proposed for Scotland

The informal committee was appointed in January 1944, to advise upon the areas in Scotland which might be suitable for National Parks and to supervise a preliminary survey, and agreed to be guided by the following definition:

A National Park is an extensive tract of country of outstanding natural beauty, preferably also of scientific, cultural or historic interest, owned or controlled by the Nation, accessible to all as a matter of right under suitable regulations, and administered by or on behalf of the Nation to the end that its distinctive values may be preserved unimpaired for the enjoyment of this and future generations.

After full consideration of reports on the surveys and of suggestions received, the Committee recommended the following areas, in the order given, as suitable for National Parks:

	<i>Approx. area in sq. miles</i>
1. Loch Lomond-Trossachs - - -	320
2. Glen Affric-Glen Cannich-Strath Farrar	260
3. Ben Nevis-Glen Coe-Black Mount -	610
4. The Cairngorms - - - - -	180
5. Loch Torridon-Loch Maree-Little Loch Broom - - - - -	500
Total - - - - -	1,870 sq. miles

A sixth area, The Merrick-Glen Trool, was omitted, as the Forestry Commission intend to turn the land owned by them into a National Forest Park with good facilities for public access.

It is suggested that the following areas, in the order stated, might be placed on a reserve list for consideration at a later date:

## NATIONAL PARKS

	<i>Approx. area in sq. miles</i>
6. Moidart-Morar-Knoydart - - -	410
7. Glen Lyon-Ben Lawers-Schiehallion - -	140
8. St. Mary's Loch - - - -	180
Total - - - -	730 sq. miles

*Department of Health for Scotland. Scottish National Parks Survey Committee. Report. National parks: a Scottish survey. Cmd. 6631 1945 (S)*

## THE NATIONAL TRUST

### Origin and work of the National Trust

It is only within comparatively recent times that the need or the duty to preserve what was best of England's legacy of wilder beauty and of historic buildings revealed itself as in any degree urgent.

Improved means of transport during the nineteenth century brought more and more of the country within easy reach of the growing towns, and in 1850 the belief was general that commercial expansion and general well-being would go forward hand in hand. As a result, emotional and philanthropic sanctions were extended to any development of property which was expected to increase its economic value. There seemed strong arguments for sweeping away any legal obstacles to the 'improvement' by building development of common lands which were no longer used by commoners but to which the general public had customary access; and the lost value of beauty seemed of little account when old buildings could be replaced by something which would yield a good financial return.

But there were other forces at work, by which the National Trust was ultimately brought into being. The Romantic Movement had drawn attention to the beauties of uncultivated nature; and John Ruskin, J. S. Mill, T. H. Huxley, William Morris and others finally helped to bring into existence the Commons Preservation Society (1865) and the Society for the Protection of Ancient Buildings (1877).

Cases arose in which land or an old building could be 'saved' if it could be put into safe hands for the future, and three remarkable people determined to found a permanent Trust for that purpose. They were Octavia Hill, whose housing work had led her to appreciate the value of open spaces such as Parliament Hill Fields to the urban working classes; Sir Robert Hunter, a solicitor who had been closely concerned with the Commons Preservation Society; and

Canon Rawnsley, who had shown great pertinacity in opposing the threat of a railway line from Buttermere to Braithwaite. In January, 1895 the Trust was incorporated as a public company not trading for profit, and from the first made steady progress. At that time neither the Office of Works nor Local Authorities had the power or means to enable them to preserve what the Trust set out to acquire and preserve, and part of the Trust's achievement has been the arousing of a public interest which has led the State and Local Authorities to take an ever larger part in matters of protection and preservation.

The first big appeal was issued in 1901—for £7,000 to buy 108 acres on the shores of Derwentwater. In 1907 the Trust was incorporated under a special Act of Parliament. By 1934 such appeals to meet threatened development had become more difficult, and in the Buttermere Valley an experiment was made in the protection of land by covenants which involved the raising of relatively smaller sums. In the same year Lord Lothian urged the Trust to prepare a scheme for preserving historic and beautiful country houses with their collections, gardens and parks. In 1937, a further Act gave the Trust additional powers for the Country Houses Scheme ultimately formulated, and in 1939 another Act extended the Scheme to settled estates. The area owned by the Trust has grown from 46,500 acres at the end of 1938 to 110,000 acres at the end of 1944.

The founders of the Trust envisaged their object mainly as a defensive fight against despoliation by 'development'. But since then other aspects of the Trust's campaign have come into prominence.

There was, for example, the problem of setting. To save a hill-top as a place of public resort and then to see it surrounded with eyesores is a possibility which makes it evident that, in many cases, large scale action to control rather than action to preserve, is needed. This can only be well done by the State which has moved steadily towards control by planning. In the meantime, covenants with the Trust should be limited to places where there is to be a large measure of public access involving active management.

Here is the second new problem. Preservation involves a highly specialised type of management and control aiming at preserving such an aspect as will be felt to be beautiful. A large part of the Trust's work must now be envisaged as the practical study of a special kind of ecology. The Trust must study plant successions, the interactions of insects, birds, and animals with plant life and of the visiting public with them all; and it must harmonise with these the needs of agriculture, and the welfare of tenants. In the case of country houses there are the further problems of retaining them as living homes and of the unobtrusive control of the visiting public. The many and varied problems of management thus involved and especially the



management of agricultural estates, today represent by far the greatest part of the Trust's work.

Nearly 40,000 acres of land are now protected by covenants with the Trust. So far as land is concerned, further development of covenants would become less likely if planning control were effectively to cover the whole country. In the case of buildings of historic interest, covenants will in any event continue to be of some value though they may prove difficult to enforce.

Behind all this lie the problems of what is worthy of preservation and whether the Trust can afford to accept properties proposed to be acquired. The work of upkeep tends to become greater and the value of endowments in terms of goods and services to become less.

Today the Trust is large enough to have needed re-organisation with an expert staff of property managers with, eventually, officers in some eight regions. However the State's control and protection of land uses may grow, there will always remain an important field for an independent body like the Trust, with long special experience in the management and upkeep of lands and buildings held primarily for their beauty or interest, and to which the public have as great a measure of access as is practicable.

LEES-MILNE, JAMES, AND OTHERS. *The National Trust: a record of fifty years' achievement*. 1945 Appendix (S)

## NEW TOWNS

### Development of Becontree

The Becontree estate has an area of 2,770 acres and will when complete contain 125,000 to 130,000 people. The estate was bought by the L.C.C. in 1920-1922, and is in the three local government areas of Ilford, Barking, and Dagenham.

The first inhabitants moved into the estate near the end of 1921, there being 2,086 inhabitants in 465 houses in March 1922; the rate of population growth is indicated by the following figures:

<i>Date</i>		<i>Population</i>
March 1924	-	14,564
March 1927	-	40,071
March 1930	-	82,689
March 1932	-	103,328

When the estate began there were available, for the houses in the Ilford area, the local government services of a developed urban area.

The library was some way away and public health services were so far away that probably few used them. There were no schools and the children ran wild until a proportion were accommodated in a church hall. Other groups were almost equally badly off. Theoretically voluntary institutions and organisations at Goodmayes were open to inhabitants on the North of the estate, but local ways of life and interests were so different that co-operation was difficult. On that part of the estate there were two beer houses, which proved quite inadequate for estate needs.

With very few exceptions all the occupied inhabitants of the estate had to travel to London each day. Train services were moderate in the North and bad in the South, and there were no bus services.

By 1928 some churches, clubs, and other institutions had been opened and there had been a considerable increase in the number of licensed premises.

The Dagenham Urban District Council was constituted in 1926 and made it possible to give the larger part of the inhabited area of the estate the public services it needed. The task was immense. Everything had to be done from the beginning.

Lack of transport facilities between the North and South portions of the estate was the main reason why each portion developed its own organisations; a bus service linking the two did not start till mid-1927. By 1929 complaints of transport facilities to London overshadowed all other grumbles.

In 1928 and the early part of 1929 the rate of growth may be called excessive. Hundreds of new inhabitants were coming to a strange place each week, many of them needed advice and help and most of whom needed some form of spare-time activity and interest.

By 1930 the estate was still almost entirely a dormitory area and despite an increase in bus services, transport facilities, in relation to numbers of users, had grown steadily worse. March 1928–March 1929 was a critical period in the life of the estate, of which rapidity of growth was the cause. Another main one was the larger proportion among new entrants of families with very low incomes. The result was the highest removal rate experienced so far, and a very large number of vacant houses.

By 1929 the Ilford and Dagenham portions of the estate were nearly complete, and development from 1930 onwards was nearly all in the Barking area. The new area was devoid of institutions, schools, and transport facilities as the others had been.

In 1931 the motor industry began to appear at Dagenham. It consisted of the huge Ford plant, the factory of Briggs Bodies Ltd., and the factory of Kelsey Hayes Ltd, and later the number of locally employed people rose considerably.

Among the changes of life which Londoners would find on arrival on the estate are the following:

People came into possession of a house and garden of their own which in most cases they had not possessed before. Household work may thereby have been increased for the wives, and the gardens took up a good deal of the husbands' spare time.

Lack of transport facilities would be very noticeable. Shops sometimes did not appear within easy walking distance for months. Trains to London were few and overcrowded.

Schools were, to begin with, far too few in number, and other educational facilities developed slowly.

Public houses were almost non-existent till 1928, although licensed working men's clubs were established earlier.

Social services were poor in the early years.

There are certain differences between Becontree and its people and an ordinary town.

Visitors to Becontree say that everything is uniform. This is chiefly due to the general uniformity of the houses, fittings and gardens; and everyone pays rent and rates in the same way to the same landlord.

The range of ages is not so wide as elsewhere. The population mainly consists of married couples aged 30-45 with children under school-leaving age.

Incomes are only moderately uniform, ranging from the poverty line to the quite comfortably off. But there is an absence of middle class people with the aptitude and leisure for social and church work. The numbers of doctors, midwives, and shopkeepers are much smaller than in an ordinary town, as the numbers are controlled.

At first the conditions that all tenants must be working class people who have been living in the L.C.C. area was strictly observed, but latterly cottages have been let to teachers, social workers, etc., on payment of an increased rent.

In some respects the inhabitants of Becontree are more mixed than in an ordinary town. Many immigrants to London seem to have later migrated to Becontree, native-born Londoners appearing to be in the minority. Teachers have been recruited from all over the country, with a strong element from Wales.

Workers in the motor industry have increased the mixture, being recruited first from Manchester and latterly from all over the country.

YOUNG, TERENCE *Becontree and Dagenham*. 1934 pp. 1-86

(5)

**New coal mining communities**

The Report of the Scottish Coalfields Commission lays down a programme for extensive mining development in the Central and South-East Region of Scotland within the next thirty years on the assumption that the pre-war Scottish output of just over 30 million tons per annum is to be maintained. It is expected that the decline of output in parts of the Central Coalfield will continue for about thirty years and thereafter be stabilised at a low figure, while to offset this decline expansion will take place elsewhere; on a moderate scale in South Ayrshire and on a large scale in the Forth Basin. If this programme is carried out the Region will produce about three-quarters of the estimated total Scottish output in 1974 as against 55 per cent. in 1939.

In terms of labour such a development would require about 15,000 miners to be brought in to the Region from elsewhere, and after allowance has been made for miners' families and those engaged in service industries and public and social services a directly associated increase of over 150,000 persons seems a reasonable estimate. Some existing pits will need more men, but most of the men will be drawn to the new sinkings which will each employ about 2,000 men who, with their families and service population, will in the course of time build up a community of about 16,000 people. This large figure, repeated for each new pit, points to the establishment of new settlements on new sites carefully sited to serve the expanding mining districts, and a plan and time-table are needed to co-ordinate the influx of new miners, provision of new houses and social facilities and increasing coal production.

It will be necessary for some of the sinkings to be made without delay in order to offset decline of production in the Central Coalfield. It will take 7-9 years from the time when sinking of these deep pits is begun before full production is reached. Thus the first two pits, one in East Fife and one in Midlothian, will not reach full production before 1954. To obtain an output of 750,000 tons from each will, it is estimated, need a labour force of 2,000 men. The extra housing required would be a great burden to local authorities in the immediate post-war period, and it is therefore fortunate that most of the new sinkings will not be needed till the second half of the thirty year period of the programme, by the end of which ten large new pits are proposed to be in full production.

The Scottish Coalfields Committee recommend, in view of the overwhelming amount of evidence in favour, that miners should generally be housed away from the pits and encouraged to form part of a mixed community with members of other trades and occupations.

An attempt has been made in this report to estimate the total

population increase to be provided for if this recommendation is to be carried out. A study of statistics from various sources shows that a proportion of 1 miner to every 8 persons must not be exceeded, and that a somewhat lower proportion is desirable. Results of a study based on the Parish figures of the 1931 Census show striking variations in number of miners in relation to general population.

In Stirlingshire and Clackmannanshire the proportions of 1 in 32 and 1 in 21 are low because the mining industry is supplemented by at least one other basic industry. The other extreme is found in the mining districts of Central Fife, and East and West Lothian, where the miners represent 1 in 5 or 1 in 6 of the total population. Here mining is the only basic industry, the services available are comparatively limited and many people go to neighbouring large towns for special shopping or other needs. So that there are a large number of people living outside the area whose prosperity is closely linked with that of the mining community. These conclusions are supported by other studies.

Between the two extremes are important areas where mining is predominant but where other industries introduce some variety into the employment structure and which tend to support miners' relatives who otherwise would have to seek work outside the area. In two such areas the proportions are 1 in 7 and 1 in 9.

The ratio of 1 in 8 has therefore been taken as the minimum to apply in areas of major expansion where an increase of over 1,500 miners is expected in the next thirty years.

In areas where a decline of mining employment is expected by 1974, it is difficult to estimate whether miners will tend to continue to live in their present locality or migrate to the vicinity of their new place of work.

On the whole, given good transport facilities, it is likely that people will tend at first to remain where they are, though later, when well-equipped new towns are established, many will doubtless move. Eventually only the miners still employed in the district may remain. The difficulty lies in estimating the total population which can be expected to remain in the district if mining employment stabilises at a certain figure.

The proportion, 1 miner to 8 other persons, implies that, with every miner and his family, at least one other family will eventually live in areas of expansion and this will require balancing industries to be set up.

It can be calculated from the 1931 Census that 44 per cent. of the total population are gainfully occupied and of these one-third are employed in the building, service and distributive industries and professions. From these figures and those for miners and agricultural

workers the number of people for whom employment should be provided in other basic industries can be calculated.

*Central and South-East Scotland Regional Planning Advisory Committee. Mears, Frank C. Interim report on population trends in relation to industrial development and housing needs. 1945 pp. 7-12 (S)*

### Origin and definition of garden cities

The 'Garden City' movement began with Ebenezer Howard's advocacy of building new self-contained towns surrounded by an agricultural or rural protective belt. These towns were to be designed as a whole, and were to provide for industry and residence, culture, recreation and all other needs of a community. The towns could be built in any place where road and rail access, water supply and drainage, etc., existed or could be provided. Howard considered it desirable that the whole land area of the town and surrounding rural belt should be in the single ownership of the developing authority, and that the profits deriving from the ownership, after a fixed maximum return upon the capital involved, should be used for the benefit of the inhabitants.

The term 'Satellite Town' was later adopted to describe a development on Garden City lines near an existing population centre, with which in many ways it would have social and commercial contact, and in the services of which it might participate, as distinguished from a Garden City at a considerable distance from any existing population centre and being mainly self-sufficient.

The term 'Garden Village' has been rather loosely used to indicate a development of moderate size. The terms Garden City, Satellite Town and Garden Village convey no clearly defined technical meaning, considerable confusion between them has arisen and it is questionable whether there is now much value in their maintenance.

The broad principles of what may be called the Garden City type of development have been generally accepted by all town planners, and it would probably be best for planning as a whole if the expressions were no longer used as having peculiar significance in regard to individual localities.

*Ministry of Health. Departmental Committee on Garden Cities and Satellite Towns. Report. 1935 pp. 5-6 (S)*

### Ebenezer Howard's recommendations for garden cities

The main components of Ebenezer Howard's garden city idea, as expounded in *Garden Cities of Tomorrow*, were:

1. *Planned Dispersal*. The organised outward migration of indus-

tries and people to towns of sufficient size to provide the services, variety of occupation and level of culture needed by a balanced cross-section of modern society.

2. *Limit to town size.* Growth of towns to be limited so that their inhabitants may be near work, shops, social centres and open country.

3. *Amenities.* Towns to be open enough to provide gardens, open spaces, and proper space for schools.

4. *Town and Country Relationship.* A large area round the town to be reserved permanently for agriculture.

5. *Planning Control.* The main framework of the town to be planned in advance, including road layout, use zones, maximum densities, and design and quality of buildings.

6. *Neighbourhoods.* The town to be divided into wards, each to some extent an entity.

7. *Unified Land Ownership.* The whole site, including the agricultural belt, to be in quasi-public or trust ownership; making possible planning control through leasehold covenants and securing betterment for the community.

8. *Municipal and Co-operative Enterprise.* Progressive experimentation in new forms of social enterprise in certain fields.

Howard made no exaggerated claims for the originality of his idea, and gave credit to others for several of his components. It is, however, a new combination of elements that distinguishes any great invention.

OSBORN, F. J. *Green belt cities: the British contribution.* 1946 pp. 32-34 (S)

## The development of Letchworth and Welwyn

The promoting group finally preferred the Letchworth Estate in Hertfordshire, 35 miles from King's Cross, 2-4 miles from Hitchin on the Hitchin-Cambridge branch of the railway line.

The land was held by 15 owners, not all willing to sell, and great secrecy had to be observed.

Finally in 1903, 3,918 acres were bought for £155,587—£40 15s. an acre. Additional land was bought later, bringing the present estate to 4,574 acres and the total price to £178,717.

In the case of Welwyn it was the finding of a suitable site which prompted the initiation of the scheme. Howard and his associates had previously noted the site as highly suitable for a new town and by sheer coincidence it came into the market. The land is on both sides of the main London-York railway line, 20-22 miles from King's Cross and at the junction of two branch lines.

In 1919, 1,458 acres of this land was put up for auction, and after many difficulties 2,378 acres was originally purchased at a price of £105,804—£44 10s. an acre. The estate is now 3,411 acres, and further additions are likely to be made.

Thus for both Letchworth and Welwyn the choice of site was determined by the chance of a large area of suitable land being purchaseable at one time.

Secrecy was difficult because of the need for preliminary surveys to see whether services could be provided; yet full disclosure of the scheme would, in the case of Letchworth, have sent up the price of some indispensable parcels of land; and in the case of Welwyn would probably have led to the withdrawal of the land from the auction sale owing to temporary resentment on the part of 'County' residents at the idea of an industrial town in the neighbourhood.

The bodies which acquired the sites and undertook the development of Letchworth and Welwyn were both public companies inviting share capital from the public at large. First Garden City Ltd. (Letchworth) was registered in 1903 with an authorised capital of £300,000. Dividends on shares were limited to 5 per cent. cumulative and any excess had to be devoted 'to the benefit directly or indirectly of the town and its inhabitants'.

Welwyn Garden City Ltd. was registered in 1920 with an authorised capital of £250,000. There was a limitation of dividend and an obligation to dispose of any balance of profit in the same way as at Letchworth. But the dividend was limited to 2 per cent. above the yield of Government Stocks at the time of subscription of the shares, and owing to the high rate of interest on Government Stocks at the time, the actual limit became 7 per cent.

Both companies had for many years considerable difficulty in raising capital, and therefore had to raise money on mortgage. This retarded development at times when it could profitably have been accelerated. On the other hand, chronic poverty induced habits of economy and ingenuity which enabled amazingly good value to be obtained for money carefully doled out.

At both towns a full programme of survey was carried out, and decisions had to be taken on the principles of administration in such matters as taking possession of agricultural land by stages, land disposal and other matters.

The Letchworth plan was prepared by Raymond Unwin and Barry Parker, and they did in fact decide the main features of the plan.

At Welwyn the plan was the work of a much larger team. An architect-planner, Louis de Soissons, prepared the preliminary general sketch. He received the contour maps and reports of the other experts as they were produced, and all aspects of the plan were



carefully considered by all the experts, a committee of directors, and all the officers of the Company.

That the company should retain possession of the freehold (with exceptions only for certain public buildings) was a fundamental part of Howard's scheme. Disposal by building lease was adopted as the method which offered the greatest freedom to developers within a system which retained the freehold for the company.

Letchworth usually granted 99 year leases at a fixed ground rent, or for 198 or 999 years with a revision every 99 years.

For factories, only leases for 999 years at a fixed rent were granted. Welwyn, for all but shops, granted 999 year leases at a fixed rent.

At first, for shop property it granted 99 year leases but later ceased to grant leases for shops. Instead it built shops through a subsidiary company and let them to defined trades on 7, 14 or 21 year agreements.

Such long leases inevitably passed to lessees the benefits of increase of value—no small matter in a rapidly growing town.

But the companies had to grant these leases in order to attract the public. Industrialists in particular disliked 99 year leases, and some would not even accept a 999 year lease, and therefore stayed away.

The few covenants necessary to safeguard the planning principle were made very definite. A site leased for a dwelling house cannot be used for any kind of manufacture or trade or sale of goods; sites let for factories cannot be used for dwellings or shops, and so on.

Licensed premises at Letchworth are governed by 'local option', and, as a result, the central area is 'dry'. At Welwyn the directors have leased sites for a reasonable number of licensed premises, providing that meals are served as well as drinks and managers get no commission on the sale of drink.

Plans, materials and external appearance of all buildings are controlled, as are advertisements on buildings.

Both towns had covenants requiring lessees to contribute to the cost of making up roads when they were taken over by the local authority. Letchworth enforced these charges and this caused dispute and difficulty. Welwyn did not; arrangements were made for the early taking over of roads and making up charges were charged on the rates,—an equitable arrangement in a completely new town.

The greater part of the factories at Letchworth, and many of those at Welwyn, are built by the manufacturers themselves on 999 year building leases. But the tendency has been more and more towards the provision of factory space on rental. It was found that one-floor sectional factories, many with two-floor office blocks on the road

frontage, were most successful. This attracted small and medium-sized firms, some of which grew to large undertakings. The sectional factories cost, pre-war, 8-10 shillings per square foot, were let on repairing leases of 1-21 years and were so arranged that firms could begin with a small space and take more as they needed it. Ample yard space is important, and more and more car-parking and cycle-storage space is needed. Untidy yards cannot be avoided and 6 feet fencing is required for screening.

Factories must be reasonably well isolated from dwellings, and a tree belt 40-50 feet wide is needed.

Just before the recent war, Letchworth and Welwyn had populations of 15,000-18,000 and their largest factories employed 1,000-1,500 workers, which was felt to be near the desirable upper limit.

Size matters less if the number employed is not subject to seasonal or cyclical fluctuations.

Socially it is not a bad thing if in a moderate-sized town fluctuations of a firm's employment comes more prominently to light. In a large town the evils of seasonable unemployment are still there but hidden; industrialists can, by planning, do something to reduce seasonable fluctuations, and in a small town there are strong incentives to do so.

Letchworth and Welwyn have many industries linked with other firms in the London region. Their experience proves that the decentralisation of linked industries to towns 25-35 miles away creates no serious difficulty.

Shopping centres present a whole series of problems, and prolonged thought was given to their development both at Letchworth and Welwyn.

Both towns excluded all trading from private houses, unless with specific consent, and this prevented the growth of scattered small shops which is common to nearly all towns. It also enabled the estate companies to control the number, size, and character of shops.

The Letchworth company granted building leases for shops and, except for general control of plots and character of buildings, there was no definite policy of limitation. Sites were let as applicants came along at ground rents which they were willing to pay. The first shop sites were leased for 99 years at ground rents as low as £10 per acre. As the town grew, new shop sites were let at higher ground rents. As a result a busy shopping centre has been created by free competition.

By mid-1939, when population was about 18,000, there were 172 shops in the main centre and 9 in a few small sub-centres. This is about 1 shop per 100 inhabitants, as against 1 for every 40-45 inhabitants in older Hertfordshire towns, and in most parts of the

country where the dwelling-house-shop has not been prevented by planning.

The average shop is still rather small and some of the traders are barely able to get a sufficient turnover. On the other hand, the earlier traders who secured low ground rents, and also earlier developers who built shops to rent, are enjoying betterment resulting from the expansion of the town, and will do so until their leases end.

The Welwyn company had Letchworth's experience much in mind in shaping their policy.

Building costs when Welwyn started in 1920 were very high and few traders would commit themselves to building on leased sites the kind of shops the company wanted—even the more adventurous would not go further than a temporary wooden shop with an option to convert it later into a permanent building at an almost nominal ground rent, if the town grew by so many thousand inhabitants.

Further, only a few shops, of the safest kinds could be arranged for even on these terms, giving an incomplete service to the earlier residents.

The company therefore approached the co-operative movement to see whether they would set up a general service store, and offering them a monopoly for a period of years. But at that time the Co-operative Union held that a co-operative store should be based on local consumer membership from the start, and so that project failed.

Finally, the company decided that the only way to provide a good all-round shopping service in the early years was to build and manage a departmental stores of their own, with a monopoly for 10 years if this proved necessary. This was the origin of the Welwyn Stores; which had to supply all kinds of goods for all levels of income, and thus had to stock classes of goods which might not be remunerative. Its management was, in consequence, difficult, and being a monopoly for years it was a natural target for criticism.

It is now a remarkable institution for a town of 15,000 and gives, in my view, a retail service superior in important respects to that which could have been provided in any other way.

It at present handles about half the town's total retail turnover.

Since 1930 the company has admitted a limited number of additional retail traders, so that there should be competition in all classes of goods, while at the same time traders would obtain a turnover sufficient for a decent livelihood.

The company itself builds the shops and lets them on occupation leases for 7–21 years. There are now nearly 40 shops, apart from the Welwyn Stores and its 4 branches. The war held up building of a further score of shops.

The policy of starting with a big department stores having a monopoly is open to argument. On the whole, I think the Welwyn policy correct, although independent traders might have been admitted a little more rapidly.

Open spaces for playing fields and amenity were generously provided for in the plans of both towns; but in this matter, appetite grows by what it feeds on. In 1939 Letchworth had  $13\frac{1}{2}$  acres per 1,000 inhabitants in use for playing fields (public and private), and parks. The real need seems to be not less than 10 acres per 1,000 apart from space needed for schools. Welwyn experience confirms this.

Generally the density, even for the smallest types of houses, falls below 12 per 'building acre'.

For houses built for sale to owner-occupiers (a good test of what people really want), densities vary from 8-5 per 'residential acre' (including access roads); and there is a small but insistent demand for  $\frac{1}{4}$ - $\frac{1}{2}$  acre sites.

Both towns have tried to minimise the segregation of houses of different sizes, and for people of different incomes. The placing of larger owner-occupied houses next to smaller weekly-rented houses was not found popular; but houses of different sizes have been successfully placed in the same road or neighbourhood. People have, however, a marked tendency to segregation by class or income.

An area containing some noticeably large and poor families comes to be regarded as lacking 'social tone', and better-off tenants move to areas where the houses may be no larger but the social atmosphere is thought superior. Rents soon reflect and intensify the distinction, and once an area loses prestige it is very difficult to prevent movement from it.

Initial planning, however good, soon loses its value unless followed up by consistent and skilled management, and unceasing watchfulness. A case in point is preventing the use of dwelling houses for trade. On any housing estate there are constant attempts to start little shops or trades, and once started they are very difficult to get rid of. Restriction is a matter of commonsense rather than logic. Some businesses—doctors, dentists, veterinary surgeons, and industrial insurance agencies—are almost inevitably carried on from private houses. One must have a clear policy. Any kind of retail trade involving stocks and customers calling at the house must be stopped at once, and all others must obtain a permit, so that each individual case may be considered.

Many different cases will have to be considered—window cleaners, gardeners, house decorators—and the company has to consider questions of equipment kept on the premises, persons employed for wages, and exhibition of signs or name plates. Tact is needed, and

public sentiment has to be taken into account. If, for example, there are in a street of 50 houses the name plates of one partnership of doctors, one architect, and one insurance agent, the street may retain prestige as a residential street. If you add the name plates of a plumber, a chimney sweep, and a solicitor, a 'commercial' touch begins to creep in. And if there are a dozen advertisements in the local paper inviting the public to do business at a dozen addresses in a street, even if no name plates are exhibited, other residents in the street will begin to lose enthusiasm for it.

Control of external design is another difficult branch of administration. Much depends on the skill of the approving architect in judging how far he can safely make concessions, and the company must be prepared to face losing an occasional valuable letting. The 'modernist' trend in architecture caused clashes. In both towns the estate architects preferred building smaller houses in terraces or blocks, fairly closely grouped to give harmonious town effects. Public opinion was against them. Tenants fought hard to get the end houses of blocks. Many experiments were made, using screen walls, etc., to reconcile two points of view. I can testify that, after persistent trials, it was almost impossible to *sell* a house in the middle of a block, and rents for houses in the centre of a block had to be lower than those of houses at the ends.

I cannot believe that the architectural problem is insoluble; and functionalist architects should be the last to seek to evade a solution which will meet the clients' requirements.

Both companies are now paying a regular 5 per cent. on their share capital, and Letchworth is gradually catching up its arrears of cumulative dividend. Neither company can be said to have fulfilled the financial hopes of shareholders, and in the case of Welwyn, some part of the fixed-interest capital, as well as the share capital, suffered a reduction during the reconstruction of 1934. Yet both have attained a strong position.

They have little difficulty now in raising, by means of loans secured on their substantial assets, the further capital needed for development; nor in covering new expenditure by quickly-realised new revenue.

The present true value of the estates may well be sufficient to cover all past development costs, including administrative overheads, plus compound interest from the start, at rates now considered appropriate to the character of the security.

In assessing the financial results of town building, it must be remembered that the share capital of the estate companies is only a small fraction of the total capital employed.

Far larger sums have been invested in houses, factories, etc., than in the land and land development. If you compare the finance of

housing in these two towns with that of housing in a typical overcrowded city centre, the public economy of garden-city development is very great.

From 1920 to 1938, 2,742 houses were built at Welwyn under the Housing Acts. Of these 1,518 received Exchequer subsidies, of a capitalised value of about £200,000. Under the Housing Act of 1938, the cost of Exchequer subsidies on 2,742 houses on expensive sites in city centres was equivalent to at least £900,000. When the local rate subsidies are taken into account the contrast is even more striking. On the same number of houses, the capitalised value of the contribution from local rates in the case of expensive central sites comes to £450,000. The cost to Welwyn rates may be roughly capitalised at £25,000.

Advocates of garden-city building have repeatedly protested against this differentiation, which encourages the undue concentration of dwellings and workplaces in big cities.

If rates of subsidy are to differ at all, they should do so in favour of a planned relocation; in fact the policy of successive Ministries of Health steered industry and population to the most disadvantageous situations.

OSBORN, F. J. *Green belt cities: the British contribution.* 1946 *Part 2* (S)

### **The establishment and development of new towns**

The Government should decide the location and size of new towns and should have powers to acquire compulsorily the land needed. The land bought should include a belt of land around the proposed built-up area of a depth of about three-quarters of a mile.

Each scheme for a new town should be treated separately, and a single agency should be responsible for each. Various agencies have been examined including a single local authority, local authorities acting jointly, a limited liability company (i.e. ordinary commercial enterprise) and a Government sponsored public corporation financed by the Exchequer. Evidence was received from the various types of local authority. In general, large towns were unwilling to develop a town in another authority's area. This means that if large cities were to act as developers the new towns would either have to be sited too near existing cities, or the cities would have to be allowed to extend their boundaries widely. Another view urged was that small towns should be extended rather than new towns created. But, in this case, it is probable that the scale of the new development might submerge the existing town, and the latter's layout might be found a handi-

cap. The possibility of the development of new towns by county councils or county districts, either separately or jointly, was also considered.

The public corporation, which is considered the most suitable agency, should be responsible for planning and development, should have no other responsibility, and should have a freedom of action, under the general direction of the Minister of Town and Country Planning, comparable with that of a commercial undertaking. At the same time it must establish relations of mutual confidence with the citizens of the new town. A similar public corporation, sponsored and financed by interested local authorities will be appropriate in some cases, but a new town must not be developed solely as a rehousing area in connection with slum clearance. There should be a good social and economic balance in a new town, and local employment and a representative mixture of social groups should be aimed at. Private enterprise and housing associations are not considered suitable agencies. An authorised association may be an appropriate agency in special cases.

The public corporation should have a governing body of 6 to 8 part-time paid members, having between them a suitable range of interests and experience. No member should regard himself as the delegate of any other authority or organisation. The corporation should have all powers needed to determine policy and control development. While it is not intended that the corporation should exercise the functions of a local authority it should be authorised, where necessary, to supply drainage and other services and amenities. The corporation should be able to supply public utility services where statutory undertakers are unable to do so. Public money should be made available to the corporation on the same terms as to local authorities. Corporations sponsored by local authorities should have similar constitutions, except that finance should be by public loan raised by the local authorities, and nominations to the governing body would be made by the local authorities.

A Central Advisory Commission should be set up to advise the various agencies which are likely to be operating throughout the country to provide a central pool of information and experience, and to perform certain other functions.

The corporation should own the freehold of the site. If the agency is an authorised association, the freehold should be vested in some body of national trustees.

The greater part of the cost of a new town will be represented by the cost of housing, factories and other buildings which can be financed on a normal basis. But initial expenditure on the purchase of land, and provision of roads, sewers and services will not produce a

full return for some years. Where the agency is a Government sponsored corporation owning the freehold, funds for these purposes should be advanced by the Public Works Loan Board, or the Exchequer, and the payment of interest should be deferred till the income from the town is sufficient to meet it. Where development is due to the re-location of population or industry following war damage, the agency should be on the same footing as regards receiving any grant under Section 5 of the Town and Country Planning Act, 1944, as would the local authority if the authority had undertaken the development. As regards housing subsidies the agency should not be at a disadvantage as compared with housing authorities elsewhere.

Suitable industries should be introduced into new towns simultaneously with housing and other forms of development. It is therefore vital that the national policy for the location of industry should keep in step with the national policy for the development of towns.

Present legislative powers are not adequate for the creation of balanced new towns, or satisfactory large-scale extensions of existing towns, under the unity of control which is indispensable.

*Ministry of Town and Country Planning and Department of Health for Scotland. Interim report of the new towns committee. Cmd. 6759 1946 (S)*

### The establishment and development of new towns

The agency itself might, subject to Ministerial consent, have power to purchase land compulsorily and this power should not be dependent on failure to purchase by agreement.

Each new town should be built as quickly as possible up to a population of 15,000 to 20,000. It may then grow more slowly up to its intended limit of 30,000, 60,000 or the figure decided on. Where an existing town is to be the nucleus, the site of the existing town should be bought compulsorily, so that the agency may be ground landlord of the whole area. This is necessary to secure complete control over redevelopment in the interests of the public, and also to prevent a serious leakage of values created by the new agency. A declaratory order, similar to that provided for in Section 1 of the Town and Country Planning Act, 1944, should be made in the first instance to cover the whole of the site. The agency should have power to determine the actual boundaries.

Development should be undertaken partly by the agency and partly, where the agency so determines, by other agencies. The agency should have powers of development as wide as those of any ordinary land-owner.



Control over use by covenants in a lease is far more effective than control by covenants imposed on the purchaser of a fee simple, or control under the Planning Acts. It is recommended that where the agency is a public corporation, the freehold of the site should be held by it or by some public body; and where the corporation holds the freehold it should not dispose of it, but should lease land for development. There need be no Ministerial control over disposal of land by a corporation other than general directions on major matters of policy.

The new towns should provide employment as soon as possible for all or most of their populations. They should provide for persons and firms moving out from congested areas, but should also provide for other persons and firms. Care should be taken to obtain a balance of income groups in all parts of the new town. Perfect synchronisation of the movement of employing firms and employed people is impracticable and it may be necessary for the new towns to be in part a dormitory town for some years.

First-class industrial facilities should be provided in the new towns, and the estate management should be organised to offer firms, where desired, advice and assistance on matters related to the establishment of their factories. Standard factory space should also be available for letting on short-term leases. It is assumed that the new towns will be regarded as areas in which the settlement of dispersed and new industries will have high priority.

The agency should have power to supply the necessary services subject to the usual departmental controls. The new town will often be in the area of more than one local authority and of more than one statutory undertaker. It is essential that there should be uniformity of supply, standards and price over the whole area. The agency should have powers to undertake the provision of district heating.

The number of people who will ultimately be rehoused in new towns and major extensions of small towns may be  $2\frac{1}{2}$  to 3 millions or more. The Government's house-building programme is expected to work up to a peak period, which would last 6 or 8 years from 1949, during which 400,000–500,000 houses might be built each year. The speed at which a new town could be built ought not to be estimated at more than 1,000–1,250 houses per annum during the peak house-building period. This would correspond to a population growth of 3,500–4,250 people a year—a high rate for absorption. It may, however, be necessary to accept it in view of the disadvantages of creating dormitory suburbs on an equivalent scale. Some inter-war housing schemes around big cities assembled vast new populations at a rate of 6,000–8,000 people a year. This caused permanent over-segregation and lack of social balance. On the basis of these rough calculations, a

new town could be built for and might be able to absorb 20,000–25,000 people within the 6–8 years of the peak period of house building. It is preferable to regard 20,000 as the maximum number to be absorbed in an entirely new town during the peak period, and 10,000 as the maximum to be added, during the same period, to an existing small town. Decision on the number of new towns which should be started during the peak period of house building, is a matter for the Government.

The creation of a new town for 40,000–60,000 people will require a large amount of money. But the investment must not be regarded as an addition to the aggregate of national expenditure on rebuilding, but as an alternative distribution of part of it. A variety of agencies, public and private, will be spending money on new development and rebuilding, and the aim of creating new towns is to allocate, in the most efficient and socially useful manner, an expenditure which is, in one way or another, inevitable.

Finance must be available to new towns on favourable terms when the opportunities for attracting people and industries are promising. It is suggested: (1) that all finance should be found by the State by way of loan; (2) that there should be no payment of interest until the town is sufficiently self-supporting to meet it; (3) that when this time comes, interest should be paid from the date of the advance; (4) when there is a surplus available over and above interest charges, provision should be made for amortisation of the loans; (5) when loans are repaid, any surplus should be applied for the benefit of the town and its inhabitants, or other public purposes.

The site of the new town may be within the area of more than one local authority, and it is desirable that from the outset one local authority should be responsible for the whole site. Local authority boundaries should be adjusted to bring this about. The town should be made an urban district as soon as its population is large enough, and in the meantime should be a separate rating area, that is, a civil parish. The agency should not exercise the functions of a local authority, but this must not preclude it from carrying out, as landowner, all or any works needed for development, and providing services in the early stages.

The agency, if a public corporation, should be made the interim development authority for the area of the new town until development is substantially completed.

When the town has reached maturity, it will be necessary to decide whether the agency should be dissolved and its assets and liabilities be taken over by the local authority or some national body, or should continue in being, in modified form, as landowner and estate manager. A large majority of the Committee believe it may prove unwise to

combine the functions of landowner and local authority in a single body.

*Ministry of Town and Country Planning and Department of Health for Scotland. Second Interim report of the new towns committee. Cmd. 6794 1946 (S)*

## The establishment and institutions of a new town

Having weighed the evidence, we feel that the balance of advantage lies with new towns on relatively undeveloped sites. We think that the difficulties which arise in carrying out a major extension of a small town, such as interference with existing interests and relationships, will not have been fully appreciated. In some cases extensions will be desirable; either because of its benefit to the towns concerned, or because there is no room for a complete new town in the area into which it is desired to remove population.

We have not considered the creation or development of new holiday towns. If such towns are needed the problems peculiar to holiday towns will need special study.

We have come to the conclusion that the optimum normal range of size for a new town is from 30,000–50,000 in the built-up area. The population within 10 miles radius might well be 60,000 and in some cases up to 80,000. Special conditions might justify the creation of a new town of less than 20,000; the creation of new towns of this size in more remote areas might well check the drift from the countryside into cities.

There may be some doubt as to what a 'balanced' community is and how it should be obtained. Economically, balance can be obtained by giving opportunity for many sorts of employment which will attract men and women up to a high income level. Beyond that the problem is frankly one of class distinction. As far as these distinctions are based on income, taxation is reducing them, but the problem remains. The new town needs some of every type of person. The town should therefore contain head offices, and administrative and research establishments; and it is most desirable that proprietors, and other leading workers, should live in the town and take part in its life.

Writers, artists, and others not tied to a particular location for their work should also find a new town a good place in which to live and work.

From the beginning, houses of varying sizes should be built.

The area of the site for a new town should be big enough for the built-up area and a peripheral belt of an average depth of three-quarters of a mile. This belt should not include the whole of the belt

## NEW TOWNS

separating the new town from other towns—the remainder should be safeguarded by normal planning control. Assuming an overall density in the built-up area, including recreational parks, of about 12 persons per acre, the approximate areas to be purchased for towns of different population would be:

<i>Intended population</i>	<i>Built-up area (acres)</i>	<i>Peripheral belt (acres)</i>	<i>Total area (acres)</i>
20,000	1,650	3,850	5,500
30,000	2,500	4,500	7,000
40,000	3,300	5,000	8,300
50,000	4,200	5,500	9,700
60,000	5,000	6,000	11,000

The town should have three main types of zone: a central zone for the main shopping centre, and some public buildings; an industrial zone; and general urban zones, predominantly residential but also containing schools, churches, and small shopping centres.

The area reserved for the main centre should be about 10 acres for each 10,000 population. The areas required for different industries vary widely. For a town mainly dependent on light manufacturing industries; an area of about 100 acres per 10,000 population should be reserved until the future trend of demand has become clear. The minimum area required in a residential neighbourhood in new development will be 48 acres per 1,000 population. This includes schools, shops, churches, neighbourhood public buildings, etc. Net residential density has here been taken at 30 persons per acre, but if there is a due proportion of larger houses on larger sites the average residential density is not likely to exceed 25. Open spaces are taken at the minimum of 7 acres per 1,000.

In the preliminary calculation, 55–65 acres should be allowed per 1,000 persons in the general urban zone, including the land needed for schools other than primary.

The overall requirement of land per 10,000 persons on the basis suggested will be 660–760 acres, overall densities being 15–13 persons per acre.

Present trends, including demand for increased open space, suggests that 12 persons per acre is likely to prove a better overall density figure than 15.

Leases should provide for control by the agency of the external appearance and materials of buildings. It should be the policy of the

agency so far as possible to secure the employment of qualified architects by persons building in the town.

Loud noises and vibration can be a great annoyance. Control of these is a function of local government rather than of the agency, but leases can make the use of outside sirens and buzzers subject to consent. Injury to health and amenities by atmospheric pollution is now admitted and can be prevented. The agency's approval should be required for any new fuel-burning appliance other than domestic.

The peripheral belt around the new town should in the main be used for agriculture, farm units being disturbed as little as possible. The agency should keep farmers informed of coming developments so that they may adjust their programme thereto.

Owing to rising standards of sanitation, the water consumption per head, in England, is likely to rise from a pre-war consumption of 30 gallons per day in towns to 50 gallons in 1970. Where all houses are new the latter figure is likely to be needed.

In recent years much attention has been given to the possibilities of district heating. Although examples are relatively few and small in scale, in this country, many examples exist abroad. In Sweden, for example, there are installations for groups of 550 flats and even for 104 terraced houses at relatively low density. The system has many advantages and we believe that the time has come for a full-scale trial in one of the first new towns. (This question is further considered in Appendix 4, *op cit.*).

We suggest that the railway station of a new town should be very different from the vast majority of railway stations in this country. It should be an outstanding feature of the town both internally and externally. Arrival and departure areas should be segregated and refreshment rooms should be of a high standard. The passenger station should be near the main shopping centre, and well related to the main bus station.

The agency should try to obtain information about the family structure of incoming population, but such estimates have limited value as a basis for estimating demand for houses, which is decided by income and habit more than by numbers of persons in a family. In England and Wales the average number of persons in a pre-war household was  $3\frac{1}{2}$ , and dividing the proposed population by  $3\frac{1}{2}$  to  $3\frac{3}{4}$  will give the approximate number of houses needed. It should be remembered that, in a new town, the number of families with children will probably be for some years at least above the national average. The majority of weekly rented houses should have 3 bedrooms, but some should have 4 bedrooms or more. Provision of flats and accommodation for single and aged persons must depend on demand.

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The provision of shops should be based on the policy which will conserve central area land values for the benefit of the town. The agency should itself finance and provide good shops for letting at occupation rents, which would be progressively higher as turnover grew.

The number of shops in old towns is as high as 1 to 40 or 50 persons, while in newer housing estates it varies between 1 to 150 and 1 to 325 persons.

The desirable range is probably between 1 to 100 and 1 to 150. No hard and fast rules can be laid down in the allocation of shops between main and subsidiary shopping centres. In the main centre each main type of shop should be represented at the earliest practicable stage. Subsidiary centres should be so arranged that residents do not have to walk more than about half a mile to satisfy daily needs.

There appears to be no need for a covered market if the shopping centre is adequate. An open market in a designated place is different. Markets are disliked by shopkeepers, but a suitable site might be reserved for a future market.

The following table sets out the ordinary day school requirements for a population of 50,000, allowing for a slight margin above the average of 14 children per year of age per 1,000 total population; and for raising the school leaving age to 16:

<i>Type of School</i>	<i>Pupils in each School</i>	<i>Acreage for School and Play-grounds</i>	<i>Acreage for Playing-field</i>	<i>Total acreage per School</i>	<i>Number of Schools</i>	<i>Total acreage</i>
Nursery - - -	40	$\frac{1}{2}$	—	$\frac{1}{2}$	30	15
Infants - - -	200	$\frac{1}{2}$	—	$\frac{1}{2}$	10	20
Junior - - -	320	2	3	5	10	50
Secondary:						
(a) standard size -	500	3	14	17	8	136
(b) smaller size -	330	2	9	11	2	22

In addition to the above, sites will be needed for colleges of further education and for special schools for children suffering from some disability.

A new town with 25,000–50,000 population would usually be served by a single college of further education which would be housed in the County College.

About 400 students a day would attend from a 50,000 town and a site of 3–4 acres, exclusive of playing fields would normally be enough.

Playing fields should adjoin Junior Schools; in other cases they may be near the periphery.

A child should not have to walk more than about  $\frac{1}{4}$  mile to a Nursery School;  $\frac{1}{2}$  a mile to an Infants, and  $\frac{3}{4}$  of a mile to a Junior School.

The general health of the population of a new town may be expected to be better than the general urban average. We are informed that general hospitals for acute cases will be organised on a basis of a main centre at the University capital of each hospital region, with a network of district general hospitals staffed by specialists and providing for all normal acute cases; these will form the backbone of the future hospital service. There will in addition be cottage hospitals staffed by general practitioners, and special hospitals.

The number of general beds required for acute cases, both medical and surgical, may be taken as 5 per 1,000 population or 250 for a 50,000 town.

The size of a general hospital must vary according to local circumstances, but it has been held that the optimum size for a hospital with specialist staff is about 800 beds, and the minimum 400. Hospitals of intermediate type should not have less than 100 beds. The local or cottage hospitals should provide about 1 bed per 1,000 population. For special hospitals the minimum provision per 1,000 population should be taken as: maternity, not less than 0.6; tuberculosis (pulmonary) 0.8; infectious diseases, 0.8. In all these cases, as well as provision for mental illness, a town of 50,000 would probably rely on its neighbours except that a maternity hospital of 30 beds is practicable, if rather small.

General practitioners are likely, under a comprehensive national health service, to operate largely from health centres, with not less than 4 and not more than 12 doctors operating from one centre.

Assuming the pre-war average of 2,000 patients on each doctor's list, a town of 50,000 would need 25 general practitioners and ultimately 3 or 4 health centres.

Maternity and child welfare and family and child guidance clinics should also be provided.

A day or day and night nursery should be provided at an early date, to establish demand and cost.

A nursery in which shopping or other visitors' children could be placed for a few hours would be a great convenience and add to the attraction of the town.

A small library in or near the shopping centre should be established at an early stage, but provision should be made for extension;  $\frac{1}{2}$  an acre should be reserved in a 20,000 town and 1 acre in a 50,000 town.

At least one hotel should be established near the centre of the town

at an early stage. A variety of restaurants to suit different tastes and purses would be essential, as the habit of eating out is increasing. The agency should pay special attention to the kind, siting and management of restaurants of all kinds and licences should be obtainable without difficulty by any establishment ready to serve both food and drink.

Commercial advertising in the wrong places disfigures a town and its approaches, and the agency should control outside advertising and signs through lease covenants. In general, external advertising on industrial or commercial premises should be limited to one approved design. No general rules can be laid down. Flood lighting, illuminated signs, and outlining buildings in coloured light may enhance the beauty of a town's centre. Flashing signs should not be allowed, and lighted signs should be so placed as to avoid interference with traffic signs.

We believe that the planning of a new town is essentially the work of a team, and the best results are likely to be obtained if the work is carried out by a carefully chosen staff working continuously under the direction of a chief executive appointed by the corporation. Under the direction of the board there should be a director-general as chief executive, a business manager, an architect, a civil engineer, an estate manager, and a public relations officer,—each with subordinate staff.

Among these officers there should be one or more with extensive town planning experience.

Assuming a town of about 50,000 population, the total cost may be estimated to be £27-£38 millions, made up as follows on the basis of a density of population of 12 to the acre:

Civil engineering	-	-	-	£6- 7 millions.
House building	-	-	-	£12-15 „
All other buildings, including factories	-	-	-	£9-12 „

The minimum figures assume favourable physical conditions and are on the basis of 1939 prices plus 50 per cent. They indicate an overall figure of about £550 per head. Apart from housing, the agency will have to spend a minimum of £6-£7 millions.

If it is assumed that construction is to be completed within 15-20 years of the initial decision, a labour force of about 5,000 will be needed, being built up to this figure in the first 3 years, and falling away after the peak of construction is passed in the eighth or ninth year.



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We recommend that a Central Advisory Commission should be set up to provide a central pool of information and experience on all matters relating to new towns, and to advise both the Minister and the several new towns corporations on matters referred to it.

*Ministry of Town and Country Planning and Department of Health for Scotland. Final report of the new towns committee. Cmd. 6876 1946 (S)*

### Factors affecting the location of satellite towns

The siting of post-war Satellite Towns will be primarily dependent on agricultural policy. The objection of agriculturalists to satellite towns on the grounds that they would occupy good farming land has little substance—the acreage of farming land which was taken for non-agricultural purposes between 1919 and 1930 was only one-third of that lost by being allowed to degenerate into rough grazings. A second objection, that urban industries in satellite towns would draw off the younger farm workers, has more substance; and can only be solved by the equalisation of living conditions and economic opportunity as between rural and urban areas.

If satellite development takes place along the natural lines of movement of the population it will be easier and more successful than if begun where population is decreasing. As an example of the kind of investigation which may be necessary to disclose such movement, the fluctuation of population from 1901 to 1931 has been considered, parish by parish, for the Counties of Northumberland, Durham and Gloucestershire. The following points were observed in all three counties:

1. The larger towns generally show either a decrease of population over the 30 years, or an increase well below the average for the country.
2. Very large areas of the rural countryside have decreased in population despite an increase in the population of the county over 30 years (25 per cent. in Northumberland).
3. The areas which have increased rapidly in population are generally those on the outskirts of towns. This increase has been greater than the county average.
4. The areas of increased population take the form of 'streamers' radiating along the lines of roads or railways, or lying between two main roads.

The location of a satellite can be considered in two ways as regards population. A site can be chosen where increase in population shows that there is already in the neighbourhood a community whose members have moved from elsewhere. Or a site can be chosen where

there is little or no existing concentration of population, or where population is decreasing, in the hope that the establishment of the satellite will counteract the existing conditions or tendency. Of these two methods the first would seem to be preferable, for it is easier to guide than to check or reverse a natural population movement.

Another way of discovering the decisions of the people regarding areas suitable for residence is by studying the 'dormitory' areas of large cities as disclosed by the 1931 Census. Such 'dormitory' areas, when separated from the parent city by a belt of open countryside, may form suitable sites for satellite towns.

The redevelopment of congested areas of cities will also create a demand for housing and industrial facilities elsewhere, and a satellite town could be built up by a gradual movement of population. As an example of the extent to which such relocation is necessary, it was found that if the seven most densely populated wards in Newcastle-upon-Tyne were reduced to a density of 40 to the acre, the excess population would be 61,200, although the City's overall density is about 26.

CASSIE, W. FISHER *The satellite town: a study of the problems involved in recentralised development. Town Planning Institute Journal Vol. xxix No. 2 1943 pp. 53-56 (S)*

#### Extension of small country towns

It would seem that many of the old-established small- or medium-sized towns should play an important receptive role in any redistribution of settlement—excluding industrial creations, urban districts near large cities and health and pleasure resorts.

Such towns are small enough to expand to some degree with advantage to them themselves, surrounding areas and services. They already possess a nucleus of services, institutions and traditions. They are already district centres. Their expansion would be a valuable corrective of the modern tendency towards a metropolitan organisation of society. Finally, these district centres already possess some measure of nodality—the primary basis of urban development. Indeed, to-day nodality is of increasing significance in the location of industry as the fixing power of other factors is released. Moreover, in urbanism nodality is a geographical value which is persistent and relatively permanent compared with other values created by the prevalence of some particular culture or technology, although, of course, nodality is a function of route-systems and may be man-made.

The towns of under 50,000 inhabitants which are being considered are road nodes and most of them are adequately served by rail. Some are undoubtedly handicapped by being some distance from a

through railway. In so far as decentralisation or dispersal of industry is planned as a necessary measure to relieve the congestion of the conurbations, these small towns are most suitable as receiving centres, for they have a prime economic requirement ready-made.

SMILES, ARTHUR E. *The redistribution of settlement. Town Planning Institute Journal Vol. xxvii No. 6 1941 pp. 197-198 (S)*

### Provisions of the New Towns Bill, 1946

The purpose of the Bill is to provide for the creation of new towns by means of Development Corporations established and financed by the Government.

Clause 1 enables the Minister of Town and Country Planning (in Scotland, the Secretary of State), after consulting the local authorities concerned, to make an order designating an area of land as the site of a proposed new town. Such an area may include as its nucleus an existing town. The procedure for making orders under Clause 1 is substantially the same as that provided for under the Town and Country Planning Act, 1944, in relation to war-damaged areas.

Clause 2 enables the Minister to set up a corporation to develop the new town once the area for the site has been designated. The corporation's aims and powers, set out in 2 (2), enable them to undertake any activity necessary for the purposes of the new town. The establishment of a development corporation will not affect the powers and duties of local authorities in the area in which the new town is situated or the powers and duties of statutory undertakers operating in that area. The corporation's powers would however, enable them, if necessary, to provide water, gas, sewerage, electricity and other similar services. Each corporation will consist of a chairman, deputy chairman, and up to seven other members, all of whom will be appointed by the Minister after consultation with the local authorities concerned.

Under Clause 3, the corporation must obtain the Minister's approval of their plans for development, and before giving approval the Minister must consult the local authorities concerned. Thereafter the Minister will make a special interim development order granting permission for any development which is in accordance with the approved plans.

The corporation is enabled, with the Minister's consent, to acquire land either by agreement or compulsorily. The procedure of the Town and Country Planning Act, 1944, is followed.

Clause 5 enables the Minister to control the disposal of land by the corporation. This will usually be by lease up to 99 years.

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Clause 7 enables local highways authorities and the Minister of Transport (for trunk roads) to acquire land to provide or improve highways communicating with the new towns.

Clause 8 (1) provides that the corporations shall be deemed to be housing associations within the meaning of the Housing Acts. The effect of this is that local authorities in congested areas who wish the corporations to build houses for them in the new towns, will be able to arrange this, and the houses will obtain the Exchequer subsidy.

As regards public health functions, the Bill provides for the constitution, in England and Wales, of joint boards by order of the Minister of Health under Section 6 of the Public Health Act, 1936, and dispenses with the need for an application for that purpose by any of the constituent local authorities. Wherever possible the sewerage of the new town will be undertaken by the local authority or joint board, but where necessary the corporation is empowered to do so.

Provision is made by Clause 14 for the transfer by agreement, at any time, of any part of the undertaking of a corporation to the appropriate local authority or statutory undertakers. If the transfer is effected at a price which makes it expedient to reduce the capital liabilities of the Corporation to the Exchequer, the Minister may, subject to the approval of the House of Commons, make an order accordingly.

When a development corporation has substantially achieved its purpose, the Minister may make an order with the consent of the Treasury for its dissolution and winding up and this order will require approval by Parliament. A further order will then transfer the remainder of the undertaking to the appropriate local authority or statutory undertakers.

Clause 22 provides for the application of the Bill to Scotland.

Capital expenditure required by a development corporation will be met by advances from the Consolidated Fund, and a corporation will only be able to borrow money from the Exchequer. Proposals for development must be approved as being likely to secure a reasonable annual return. The accounts of a corporation will be subject to audit by the district auditor.

A close estimate of the capital cost of the development of a new town is not possible, but it is considered that the cost of developing a town for a population of 50,000 would be of the order of £19,000,000, spread over ten years. Of this £15,500,000 would be spent by the corporation and £3,500,000 by local authorities. This estimate assumes that services such as hospitals, gas and electricity will not be provided by a development corporation or by local authorities as such. It is also assumed that a large part of the con-

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struction of shops, factories and middle class houses will be undertaken by private developers. The Bill seeks to provide £50,000,000 to enable the programme to be started and it is believed that this will cover requirements for about 5 years.

*Minister of Town and Country Planning and Secretary of State for Scotland. New towns bill; explanatory and financial memorandum. 1946 (S)*

## OPEN SPACES

### **The legal status of commons, village greens, etc.**

Commons are usually on the outskirts of the parish and comprise land which has never been brought under cultivation. Sometimes, land which was formerly a common but is no longer, is still referred to as 'the common'. The existence of Commoners' rights over it is what makes land legally a common—i.e. the rights enjoyed by certain persons, or owners of certain farms, cottages, etc., to graze cattle or gather fuel or otherwise to use the common in certain ways.

Strictly speaking, only the Lord of the Manor or other owner of the soil, and the commoners have any rights over a rural common under the general law; the public as such have none. But if members of the public wander over a common and do no harm, they are not punishable, and the owner cannot well exclude them. In the second place, there are several ways in which the public can acquire a legal right to go on a common. Thus under Section 193 of the Law of Property Act, 1925, the public have a legal right of access for air and exercise to the whole of any common of which any part lies within a borough or urban district, and also to any common in a rural parish to which the Section has been applied by a deed executed by the owner. The total area in rural districts which has already been so treated is nearly 112,000 acres. Camping, lighting fires and driving vehicles are prohibited on any common subject to the Section and certain other limitations can be applied. Under the Commons Act, 1899, the District Council can by agreement 'improve' a common for recreational use and thereafter regulate its use by the public.

No land which was commonable on 1st January, 1926, may be enclosed or built upon without the sanction of the Ministry of Agriculture.

A 'village green' in the full legal sense of the term is land over which there has always been a local custom of recreation, such as village cricket, maypole or other annual event. The 'custom' is confined to the inhabitants and must relate to some specific or organised kind of recreation. The mere fact that a piece of land in a village has always been unenclosed does not make it a 'village green' in the full legal sense, but where land is of this kind any encroachment on it can be resisted. Sometimes a local village green is not subject to any custom but is a common or merely a piece of land over which no particular rights are known to exist and of which even the ownership may be in question. Whatever is the situation some authority, preferably the parish council, should look after the green on behalf of the public, and powers exist to enable this to be done.

Other kinds of open spaces are land allotted by Inclosure Awards

for the recreation of the inhabitants or for other purposes, manorial waste and roadside waste.

Manorial waste comprises unenclosed land which is neither common, village green nor roadside waste. If common rights were still exercisable over it on 1st January, 1926, it can be protected from enclosure.

Roadside waste is legally part of the highway—i.e. land over which the public enjoy the same right of passage as they do over the metalled part of the highway. It had its origin in the days before metalled roads, when in wet weather vehicles had to pick the best route between the hedges, and highways tended to be wide.

*Commons, Open Spaces and Footpaths Preservation Society. Baker, Humphrey. Commons, village greens and other open spaces. 1939 (S)*

#### Playing fields: requirements, and existing open space

'The National Playing Fields Association consider that, if team and other games are to be reasonably catered for, 6 acres of playing fields are required per 1,000 population, apart from open space needed for amenity and for the use of persons who do not desire to play games. Evidence has been given to the Commission [by the Garden Cities Association to the effect set out in the table following]:

#### *Approximate acreage of public open space per 1,000 population*

London (L.C.C. area)	-	-	-	1.88
Birmingham	-	-	-	3.77
Glasgow	-	-	-	2.83
Liverpool	-	-	-	2.5
Manchester	-	-	-	2.88
Cardiff	-	-	-	1.95
Newcastle-upon-Tyne	-	-	-	4.3

'In addition, however, there are, certainly in London, and probably in some of the other districts named, considerable areas of private recreation grounds. It must, of course, be remembered that such figures framed by reference to administrative areas may be subject to limitations for the purpose of making comparison between one town and another. For example, a town whose boundaries have, particularly in recent years, been extended well beyond its built-up area may, by reason of this fact, show a higher proportion of open space including fields than a town which is built up to its boundary.'

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 para. 153 (E)*

## OPEN SPACES

### Recommended standards for playgrounds and playing fields

It is generally agreed by park, recreation and city planning authorities that each town should have 10 acres of public park and recreation space for each 1,000 of the local population.

The basic outdoor recreation areas are the playground and play-field and there is considerable agreement among the authorities concerned about the space requirements of these two types of area.

#### *The neighbourhood playground*

For many years the playground has been defined as an outdoor area which provides opportunities for children, primarily for 6-14 year old's, to take part in a variety of fundamental and enjoyable play activities, and it has been recommended that a playground should be within easy reach of every home. As the children were mainly of grammar school age a desirable location was at or near the elementary school site.

In recent years increasing use has been made of playgrounds by older children and adults. A growing appreciation of the value of family recreation, introduction of daylight saving, a growing demand for lighted areas for evening use and lack of other outdoor facilities for youths and adults, have all contributed to this change. The neighbourhood playground has become an outdoor recreation and relaxation centre. This change has required playground standards to be revised, although it should be borne in mind that, while the playground will continue to be the chief centre of outdoor play for the children, youths and adults will seek much of their recreation in other more distant places.

The following standards are recommended for neighbourhood playgrounds:

In closely built-up areas a playground should be within a quarter mile of each home and this distance should never exceed a half mile.

Space requirements for neighbourhoods of different populations vary as follows:

<i>Present or estimated future population of neighbourhood</i>	<i>Minimum acreage of playground needed</i>
1,000	2.75
2,000	3.25
3,000	4.0
4,000	5.0
5,000	6.0



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If a neighbourhood has much more than 5,000 population it is usually better to have more than one playground, partly because suitable sites of over six acres are often difficult to obtain and partly because two smaller playgrounds can be placed nearer to more homes and will attract a larger attendance than a single large playground. A single playground which falls far short of the recommended size cannot serve the needs of all the population and should generally be restricted to children's use.

A playground should have most of the following features and equipment :

- Corner for under school age children.
- Gymnastic and play apparatus area.
- Open space area for unorganised games.
- Under-size pitches for football, etc.
- Tennis courts, netball pitches.
- Area for crafts, quiet games, dramatics.
- Area for table games and other recreation for old people.
- Shelter.
- Paddling pool.
- Trees, shrubs and lawns.

### *The Playfield*

The playfield primarily provides opportunities for youths and adults to indulge in recreations which require more space than can be provided in a neighbourhood playground, although a section of the playfield can often be developed as a playground for children of the surrounding area. Apart from football, baseball, hockey, etc., an outdoor theatre, recreation building and swimming pool are common playfield features. Most people will visit the playfield less often than the neighbourhood playground both because the playfield must usually lie at a greater distance from their homes and because many playfield activities require a considerable time for their performance.

In general, a playfield will meet the needs of the population served by four neighbourhood playgrounds. There are advantages in placing the playfield on or near the high school site. If sufficient land is available part of the playfield may be developed as a landscape park, in which case it is called a playfield-park.

The following standards are recommended :

The playfield should lie between  $\frac{1}{2}$  to 1 mile of every home served, the distance depending upon population density and ease of access.

There should be  $1\frac{1}{4}$  acres of playfield for every 1,000 of present or estimated future population, and a playfield should be provided

## OPEN SPACES

for every 20,000 of the population. Larger populations are better served by two smaller fields than one larger one.

Minimum size recommended is 10-12 acres but 20 acres is usually required to provide the proper facilities and sometimes a larger area.

The playfield should have most of the following equipment and facilities:

- Children's playground.
- Pitches for several field games and sports.
- Courts for tennis, badminton, etc.
- Lawn areas for archery, croquet, putting, etc.
- Swimming pool.
- Open-air theatre.
- Picnic centre for small groups.
- Recreation building.
- Car parking area.

*National Recreation Association (U.S.A.). Standards for neighbourhood recreation areas and facilities. 1943 p. 3-6 (S)*

### University playing fields

<i>University</i>	<i>Acreage of site</i>	<i>Acreage of playing-fields only</i>	<i>Date of acquisition of land</i>	<i>Distance of playing-fields from University (miles)</i>	<i>Distance of University from City centre (miles)</i>	<i>Number of students</i>
Birmingham -	100	—	1900, 1907, 1928	Combined	2½	1,930
Hull - -	62 plus 29 at Halls of Residence	—	1926-1931	Combined	1½	212
Leeds - -	—	85	—	3	½	1,500
Manchester -	—	71	—	3	1	2,942
Nottingham -	100 plus 35 for playing fields	—	1922	Combined	3½	1,000
Reading -	10 plus 34 for playing-fields plus sites of Halls of Residence, etc.	—	1904	—	½	783
Sheffield -	—	18½	—	4	—	941

DOUGILL, WESLEY *Educational buildings: their relation to the town plan. Town Planning Review Vol. xvi No. 1 1934 p. 5 (E)*

# OPEN SPACES

## Children's playgrounds

At 871 children per acre of playground space, 5,740 acres of small playgrounds were needed in urban areas to provide for approximately 5 million children who had not at present a playground within reasonable walking distance of their homes.

Comparison of numbers of playgrounds and public bowling greens in 38 towns (excluding seaside resorts) of over 50,000 inhabitants:

<i>City or Town</i>	<i>Population (1931)</i>	<i>Number of children's playgrounds</i>	<i>Number of public bowling greens</i>
Birmingham - -	1,002,000	31	40
Blackburn - - -	122,000	15	17
Bolton - - -	177,000	14	21
Bootle - - -	76,000	6	12
Bradford - - -	298,000	26	34
Bristol - - -	402,000	4	10
Burnley - - -	98,000	7	14
Darlington - - -	72,000	6	7
Doncaster - - -	64,000	3	5
Dudley - - -	59,000	5	9
Glasgow - - -	1,088,000	16	80
Hastings - - -	65,000	5	10
Hull - - -	313,000	22	23
Ilford - - -	131,000	7	9
Leeds - - -	482,000	16	45
Liverpool - - -	855,000	48	74
Manchester - - -	766,000	30	79
Middlesbrough - -	138,000	3	4
Newcastle - - -	283,000	23	25
Northampton - -	92,000	9	16
Norwich - - -	126,000	18	23
Nottingham - - -	268,000	11	20
Oldham - - -	140,000	6	16
Portsmouth - - -	249,000	5	13
Preston - - -	119,000	13	14
Rotherham - - -	69,000	3	6
St. Helens - - -	106,000	12	16
Sheffield - - -	511,000	19	32
South Shields - -	113,000	2	12

## OPEN SPACES

<i>City or Town</i>	<i>Population (1931)</i>	<i>Number of children's playgrounds</i>	<i>Number of public bowling greens</i>
Stretford - - -	56,000	7	17
Sunderland - - -	185,000	4	11
Tynemouth - - -	64,000	6	8
Walsall - - -	103,000	9	15
Warrington - - -	79,000	12	16
West Bromwich - -	81,000	3	5
West Hartlepool - -	68,000	2	4
Wimbledon - - -	59,000	2	5
York - - -	84,000	11	19
38 Cities and Towns -	9,063,000	441	786

A contrast :

<i>City or Town</i>	<i>Population (1931)</i>	<i>Number of children's playgrounds</i>	<i>Number of public bowling greens</i>
Barry - - - -	39,000	19	3
Huddersfield - -	113,000	29	3

HUTT, A. M. *The Times* 8th Feb. 1944 (S)

### Provision of open space in 22 American towns

Park officials have frequently stated that the desirable ratios of park and playground space to population and city area are 10 acres per 1,000 persons and about 10 per cent of the total city area. These standards have been advocated with the important qualification that the area of parks and playgrounds should be equally distributed among all districts of the city rather than concentrated in one or a few large holdings.

Few cities meet these standards. The average in the sixteen self-contained cities covered in this survey is 4.79 acres per 1,000 persons or 3.98 per cent of the total City area.

Figures for the four population classifications are :

# OPEN SPACES

<i>Number of cities</i>	<i>Population classification</i>	<i>Parks and playgrounds area: acres per 1,000 persons</i>	<i>Parks and playgrounds percentage of total City area</i>	<i>Parks and playgrounds percentage of developed area</i>
4	5,000-50,000	4.94	2.68	4.58
5	50,000-100,000	4.55	3.30	6.02
6	100,000-250,000	4.67	4.79	7.13
1	250,000-300,000	6.11	7.78	9.98

The average for the six satellite cities is 1.09 acres per 1,000 persons. The reason why this figure is so much lower than for self-contained cities is that many of the park needs of the satellite are and always will be supplied by the facilities of the parent City.

<i>City</i>	<i>Parks and playgrounds</i>	
	<i>Area in acres</i>	<i>Acres per 1,000 persons</i>
Knoxville, Tenn. -	71	0.7
Vancouver, B.C. -	1,380	9.6
San Angelo, Tex. -	64	2.8
Fort Worth, Tex. -	1,243	8.1
Cape Girardeau, Mo. -	44	2.9
Sacramento, Cal. -	369	4.1
San Jose, Cal. -	38	0.68
Springfield, Mo. -	291	5.1
Cedar Rapids, Ia. -	444	8.0
Tulsa, Okla. -	246	1.7
Louisville, Ky. -	1,881	6.1
Peoria, Ill. -	388	3.7
Jefferson City, Mo. -	81	4.6
San Antonio, Tex. -	952	4.1
Troy, O. -	82	9.4
Binghamton, N.Y. -	382	4.9
Totals -	7,956	
Averages -		4.8

# OPEN SPACES

City	Parks and playgrounds	
	Area in acres	Acres per 1,000 persons
Clayton, Mo. - -	13	1.5
University City, Mo. - -	34	1.4
Maplewood, Mo. - -	7	0.6
River Forest, Ill. - -	28	3.1
Ferguson, Mo. - -	0	0.0
Shrewsbury, Mo.- -	0	0.0
Totals - - -	81	
Averages - - -		1.1

BARTHOLOMEW, HARLAND *Urban land uses. Harvard City Planning Studies iv*, 1932 pp. 110-115; Tables 43, 45 (S)

## Desirable provision

'The problem [of compensation] was solved at Letchworth by a single ownership. Consequently, in addition to a liberal supply of public open spaces, sports and other clubs, schools, etc., they have been able to rent or lease on easy terms as much land for recreation as they required. In this way, we have, perhaps for the first time, some guide to the amount of open land which an urban community desires. The position at Letchworth is shown by the following table:

Letchworth population—15,000.      Number of dwellings—4,068.

Land Uses	Area in acres
Commercial - - -	31
Industrial - - -	132
Residential - - -	708
Public open space - -	106
Leased open space - -	162
Allotments - - -	44
Small holdings - - -	230
Large farms - - -	2,587'

UNWIN, RAYMOND. *Urban development. Town Planning Institute Journal. Vol. xxi. No. 10* 1935 p. 256 (E)

# OPEN SPACES

## Provision in certain towns

Town	Population	Approx. developed acreage	Approx. number of persons per developed acre (inc. open spaces)	Approx. number of persons per acre of public open space within the town	Approx. percentage of developed area occupied by public open space	Acreage of public open space per 1,000 population
Blackpool -	73,800	1,784	41	230	18	4.2
Bolton -	182,200	—	—	282*	—	3.4
Bradford -	291,100	—	—	215*	—	4.6
Bristol -	377,061	10,238	37	404	9	2.5
Cambridge -	59,262	3,112	19	180	11	5.5
Derby -	130,000	4,250	31	1,023	3	0.9
Edinburgh -	[420,264]	—	—	130*	—	7.6
Kansas -	—	—	—	—	—	9.0
Leeds -	—	14,900	31	305	10	3.3
Los Angeles -	—	—	—	—	—	11.9
Middlesbrough -	131,103	—	—	1,040*	—	0.9
Minneapolis -	—	—	—	—	—	11.25
Newcastle upon-Tyne -	278,400	5,295	53	215	24	4.6
Rotherham -	68,045	—	—	757	—	1.3
Seattle -	—	—	—	—	—	4.4
Sheffield -	519,239	12,526	41	578	7	1.7
Shrewsbury -	31,013	850	36	600	6	1.6
Southend -	106,021	3,400	31	280	11	3.4
Stirling -	21,345	—	—	70*	—	14.0
Wakefield -	53,000	—	—	885*	—	1.1
Washington -	—	—	—	—	—	9.3
York -	84,052	—	—	150*	—	6.6
Average of 20 cities in U.S.A.	—	—	—	—	—	9.0

\* In the case of cities thus marked it is not definitely stated that the Public Open Space is within the city boundary.

PEPLER, G. L. *Open spaces. Town Planning Review. Vol. x. No. 1* 1923 pp. 18-20 (S)

## OVERCROWDING

### Number of overcrowded dwellings, 1936

'At the time of the survey of overcrowding made in England and Wales in 1936, in pursuance of Section I of the Housing Act, 1935, 324,000 dwellings were overcrowded. In Scotland the position was relatively much worse, the number of overcrowded dwellings being 259,000.'

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 para. 141 (E)*

# OVERCROWDING

## Number of tenements and occupants

### ENGLAND AND WALES

Rooms in a Tenement	Number of Tenements			
	1891	1901	1911	1921
1 room - - -	286,946	251,667	254,710	317,417
2 rooms - - -	697,322	658,203	660,472	917,958
3 rooms - - -	756,756	779,992	1,107,873	1,358,681
4 rooms - - -	1,464,681	1,596,664	1,981,428	2,144,183
5 rooms or more -	2,925,296	3,750,342	4,000,807	4,000,958
Total - - -	6,131,001	7,036,868	8,005,290	8,739,197

Rooms in a Tenement	Occupants of Tenements			
	1891	1901	1911	1921
1 room - - -	640,410	507,763	482,722	623,869
2 rooms - - -	2,416,617	2,158,644	2,098,092	2,834,802
3 rooms - - -	3,227,464	3,186,640	4,429,119	5,330,506
4 rooms - - -	6,814,069	7,130,062	8,549,706	9,052,608
5 rooms or more -	15,903,965	19,544,734	20,510,853	18,338,161
Total - - -	29,002,525	32,527,843	36,070,492	36,179,946

CLARKE, JOHN J. *Housing in relation to public health. Town Planning Review Vol. xi No. 4 1926 p. 275 (E)*

### Overcrowding in London

'Large sections of the population are at present living in overcrowded and insanitary conditions. Taking the County of London as an example, the 1931 Census revealed that nearly two-thirds of the private families in the County (752,705) families out of a total of 1,190,030) were sharing accommodation in non-structurally separated dwellings [L.C.C. Valuer. *Census—1931 London*. Report to the Housing and Public Health Committee of the L.C.C. 1935.] where, in many cases, the provision of bathrooms, W.C.'s, kitchens and water points, etc., was inadequate even for a single family. In certain boroughs the proportion was even higher—in Islington and St. Pancras over 80 per cent. of the families shared dwellings, and Stoke Newington, Paddington and Hackney all had more than 70 per cent. The average number of families in the shared dwellings over the



## OVERCROWDING

whole County was 2·56, while 167,130 dwellings had four or more families in them. The number of families sharing increased during the years 1921-31. . . .

'As regards overcrowding, 13·13 per cent. of the private family population of the County were, in 1931, living more than two to a room. 47,343 persons were living more than four persons to a room.'

LING, ARTHUR *We must base our housing plans on sound economics. The Architects' Journal* 9th Mar. 1944 p. 187 (E)

# POPULATION

## Density of population

	<i>Area in sq. miles</i>	<i>Population (1939)</i>	<i>Population per sq. mile</i>
England and Wales -	58,340	41,031,000	703
Belgium - - -	11,750	8,250,000	702
Holland - - -	13,514	8,560,000	633
Germany - - -	226,435	78,526,000	347
Italy - - -	130,714	45,056,000	345
France - - -	212,895	42,000,000	197
U.S.A. - - -	3,026,789	131,669,275	43
England - - -	50,330	38,552,000	766

*Ministry of Works and Planning. Committee on Land Utilisation in Rural Areas. Report (the Scott report). Cmd. 6378 1942 para. 3 (E)*

## Density and increase of population, 1801-1931

	<i>Population</i>	<i>Persons per sq. mile</i>	<i>Percentage increase since previous census</i>
1801	8,892,536	153.0	—
1811	10,164,256	174.7	14.2
1821	12,000,236	206.3	18.1
1831	13,896,797	238.8	15.8
1841	15,914,148	273.5	14.5
1851	17,927,609	308.1	12.7
1861	20,066,224	344.8	11.9
1871	22,712,226	390.3	13.2
1881	25,974,439	446.4	14.4
1891	29,002,525	497.2	11.4
1901	32,527,843	557.7	12.2
1911	36,070,492	618.0	10.8
1921	37,886,699	660.5	6.1
1931	39,947,931	684.3	3.0

BARTHOLOMEW, JOHN *Survey atlas of England and Wales.* 1939 (E)

## POPULATION

### Density of population in towns of various sizes

'Considerable disparities . . . exist between large towns in regard to the number of persons per acre and the number of persons per room. Grouping London and the country boroughs and the large boroughs according to their population, it is found that in 1931 the number of persons per acre, a figure which may be taken as giving a rough measure of the density of houses in a town, varied from 15.0 to 58.7 among towns with populations exceeding 500,000 ; from 12.2 to 62.8 among towns with populations between 200,000 and 500,000 ; and from 7.6 to 39.1 among towns with populations between 100,000 and 200,000 (the figures as to the density of persons per acre signify the overall densities in the areas in question, taking account of roads, railways, factories, etc., as well as houses). As regards the numbers of persons per room the figures varied from 0.83 to 1.56 in the first group ; from 0.69 to 1.14 in the intermediate group ; and from 0.64 to 1.58 in the third group. The existence of such wide differences between towns in the same population groupings clearly indicates that an unduly high density of persons per acre or per room is not an inevitable concomitant of a large town.'

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 para. 127 (E)*

### Age distribution of population

Country	Year	Under 10	10-19	20-29	30-39	40-49	50 and over
Bulgaria - -	1926	24.6	21.3	17.8	11.9	9.7	14.7
England and Wales	1927	16.9	17.7	16.7	14.3	13.2	21.2
	1881	25.7	20.6	17.0	12.6	9.8	14.4
France - -	1926	14.8	16.2	16.5	13.9	13.3	25.2
	1881	18.3	17.1	15.8	13.8	12.4	22.5
Germany - -	1925	15.8	20.4	18.4	14.2	12.4	18.8
	1880	25.1	19.7	15.9	13.0	10.4	15.8
Italy - - -	1921	20.1	21.0	16.2	12.9	10.6	19.1
	1880	22.7	20.5	14.4	13.4	11.2	17.8
Sweden - -	1930	15.9	18.0	17.3	14.4	12.0	22.4
	1880	23.0	19.5	15.7	12.3	10.7	18.8
U.S.A. - -	1930	19.6	19.2	16.9	14.9	12.2	17.2
	1880	26.7	21.4	18.2	12.7	9.1	11.8

THOMPSON, WARREN S. *Population problems*. 1935 Table 5 (E)

### Distribution of population by age and sex in 1937 compared with two theoretical stationary populations

'A more specific illustration of the transitory and unbalanced nature of the present age distribution is provided in the following table, in

# POPULATION

which comparison is made between the current population and two theoretical stationary populations, *A* and *B*, chosen as having some significance in the present examination.

'*A* represents the population which would ultimately be reached and permanently maintained by a constant annual supply of 700,000 births (the number now being registered in Great Britain) if they died out at the rates of mortality disclosed by the most recent national life table investigation. (E.L. No. 10-1930/2)

'*B* represents the ultimate population similarly recruited but dying out at lower rates of mortality such as may not unreasonably be anticipated in the future.'

Age group	Population (in thousands)		
	Actual population of Gt. Britain 1937	Stationary Population	
		<i>A</i>	<i>B</i>
Under 15 persons - -	10,179	9,562	9,691
15-45 males - - -	10,527	9,044	9,276
„ females - - -	11,129	8,869	9,076
45-65 males - - -	4,751	4,942	5,566
„ females - - -	5,552	5,082	5,537
Over 65 persons - -	3,870	5,033	8,392
Total - - -	46,008	42,532	47,538

## Distribution per 1,000 total

Age group	Actual population of Gt. Britain 1937	Stationary population	
		<i>A</i>	<i>B</i>
Under 15 persons - -	221	225	203
15-45 males - - -	229	213	195
„ females - - -	242	209	191
45-65 males - - -	103	116	117
„ females - - -	121	119	117
Over 65 persons - -	84	118	177
Total - - -	1,000	1,000	1,000

Registrars-General of England and Wales and of Scotland.  
Current trend of population in Great Britain. Cmd. 6358  
1942 para. 7 (E)

# POPULATION

## Distribution of population by age and sex, 1931

Ages last birthday	England and Wales		Scotland	
	Males	Females	Males	Females
Under 5 years - -	1,510,214	1,480,043	213,598	209,748
5 and under 10 years	1,677,845	1,644,811	229,401	226,312
10 " " 15 "	1,620,431	1,586,814	214,547	211,268
15 " " 20 "	1,709,512	1,724,989	219,162	220,130
20 " " 25 "	1,699,141	1,795,346	205,792	215,785
25 " " 30 "	1,628,993	1,728,107	186,546	202,487
30 " " 35 "	1,433,289	1,621,997	162,247	187,248
35 " " 40 "	1,283,010	1,520,029	143,892	172,262
40 " " 45 "	1,229,346	1,434,207	134,474	157,769
45 " " 50 "	1,186,554	1,367,385	129,889	150,694
50 " " 55 "	1,116,319	1,265,318	126,699	139,834
55 " " 60 "	987,445	1,081,032	115,547	122,474
60 " " 65 "	778,064	878,887	91,681	100,090
65 " " 70 "	577,970	692,700	68,115	80,693
70 " " 75 "	376,480	494,271	46,006	60,179
75 " " 80 "	204,179	295,684	24,546	35,691
80 " " 85 "	83,640	142,188	9,775	16,705
85 years and over -	30,578	65,519	3,516	8,018
Total—all ages -	19,133,010	20,819,367	2,325,523*	2,517,457*

\* Inclusive of 90 males and 70 females not classified by age.

*Statistical Abstract for the United Kingdom for each of the fifteen years from 1924-1938. Cmd. 6232 1940 Table 16 (E)*

## Distribution of population between six 'security classes'

	Numbers in thousands		
	Men	Women	Total
I. Employed Persons - -	13,350	4,750	18,100
II. Others gainfully occupied	2,150	450	2,600
III. Housewives, including gainfully occupied -	—	9,450	9,450
IV. Other persons of working age - - - -	1,000	1,300	2,300
V. Children under 15, or 15-16 at school - -	5,000	4,800	9,800
VI. Persons above working age who have retired -	1,200	3,550	4,750
	22,700	24,300	47,000

# POPULATION

[The above are the six 'Security Classes' of the Beveridge Plan. This Table is subject to the assumptions and limitations stated in Appendix A, para. 48 *op. cit.* The figures are an estimate for 1944.]

BEVERIDGE, WILLIAM H. *Social insurance and allied services.*  
Cmd. 6404 1942 *Appendix A para. 47 (E)*

## Distribution of occupied population

Area	Gainfully occupied population (000's)					
	1801	1861	1901	1911	1921	1931
London and the Home Counties* -	519	2,129	3,838	4,361	4,614	5,417
Lancashire - - - - -	321	1,242	2,090	2,448	2,448	2,591
West Riding, Notts., and Derby -	356	1,038	1,794	2,047	2,153	2,351
Staffs., Warwick, Worcs., Leics., and Northants. - - -	439	969	1,522	1,716	1,864	2,104
Northumberland and Durham -	92	356	705	810	897	928
Mid-Scotland † - - - -	130	543	1,021	1,088	1,197	1,212
Glamorgan and Monmouth - -	43	222	473	627	692	682
Rest of Great Britain - - -	2,316	4,054	4,869	5,371	5,557	5,770
Total - - - - -	4,216	10,553	16,312	18,351	19,422	21,055

Area	Proportionate number of gainfully occupied persons					
	1801	1861	1901	1911	1921	1931
London and the Home Counties* -	12.3	20.2	23.5	23.8	23.8	25.7
Lancashire - - - - -	7.6	11.8	12.8	12.7	12.6	12.3
West Riding, Notts., and Derby -	8.4	9.8	11.0	11.2	11.1	11.2
Staffs., Warwick, Worcs., Leics., and Northants. - - -	10.4	9.2	9.3	9.4	9.6	10.0
Northumberland and Durham -	2.2	3.4	4.3	4.4	4.6	4.4
Mid-Scotland † - - - -	3.1	5.1	6.3	5.9	6.2	5.8
Glamorgan and Monmouth - -	1.0	2.1	2.9	3.4	3.6	3.2
Rest of Great Britain - - -	55.0	38.4	29.9	29.2	28.5	27.4
Total - - - - -	100.0	100.0	100.0	100.0	100.0	100.0

\* Bedfordshire, Buckinghamshire, Essex, Hertfordshire, Kent, Middlesex and Surrey.

† Counties of Lanark, Renfrew, Dumbarton, Midlothian and West Lothian.

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 p. 23, Table 2 (E)*

# POPULATION

## Population growth by regions

Area	Population in thousands						
	1801	1861	1901	1911	1921	1931	1937
London and the Home Counties* - - -	1,892	4,653	8,655	9,616	10,040	11,123	11,843
Lancashire - - -	673	2,429	4,387	4,768	4,969	5,039	5,013
West Riding, Notts. and Derby - - -	891	2,181	3,953	4,415	4,674	4,915	4,964
Staffs., Warwick, Worcs., Leics. and Northants. -	851	2,081	3,404	3,740	4,043	4,298	4,482
Northumberland and Durham - - -	318	852	1,791	2,067	2,238	2,248	2,207
Mid Scotland† - - -	387	1,174	2,277	2,489	2,639	2,645	2,738
Glam. and Monmouth -	116	492	1,158	1,517	1,729	1,663	1,568
Rest of Great Britain -	5,373	9,267	11,375	12,219	12,436	12,900	13,193
Total - - -	10,501	23,129	37,000	40,831	42,768	44,831	46,008

Area	Proportionate Population						
	1801	1861	1901	1911	1921	1931	1937
London and the Home Counties* - - -	18.0	20.1	23.4	23.6	23.5	24.8	25.7
Lancashire - - -	6.4	10.5	11.9	11.7	11.6	11.2	10.9
West Riding, Notts., and Derby - - -	8.5	9.4	10.7	10.8	10.9	11.0	10.8
Staffs., Warwick, Worcs., Leics., and Northants. -	8.1	9.0	9.2	9.2	9.5	9.6	9.7
Northumberland and Durham - - -	3.0	3.7	4.8	5.1	5.2	5.0	4.8
Mid Scotland† - - -	3.7	5.1	6.2	6.1	6.2	5.9	6.0
Glam. and Monmouth -	1.1	2.1	3.1	3.7	4.0	3.7	3.4
Rest of Great Britain -	51.2	40.1	30.7	29.8	29.1	28.8	28.7
Total - - -	100	100	100	100	100	100	100

\* Home Counties are taken as Bedfordshire, Buckinghamshire, Essex, Hertfordshire, Kent, Middlesex and Surrey.

† Counties of Lanark, Renfrew, Dumbarton, Midlothian, and West Lothian.

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 Table 1 p. 22 (E)*

## Distribution of population between large urban centres

'More than one-third of the population of England and Wales lives in the six largest city-groups or 'conurbations' of Greater London, Birmingham, Manchester, Liverpool, Leeds-Bradford and Tyneside, and over half lives in or near the fourteen chief urban centres. The census returns of 1931 showed that over 80 per cent. of the population

## POPULATION

lived in areas classified as 'urban' for local government purposes, and even this high figure needs to be increased in view of the fact that there are many small towns which are situated in districts that are classified as 'rural'. We are the most urban nation in the world.'

*Ministry of Works and Planning. Committee on Land Utilisation in Rural Areas. Report (the Scott report). Cmd. 6378 1942 para. 4 (E)*

### Forecast of population

'The assumptions thus selected have been arrived at from the experience of the factors themselves without regard to any purpose to which the resulting population forecasts may be applied. But though they are not consciously biased in either direction, the margin of doubt to which they are exposed, and which may be insignificant at the outset, must rapidly widen as the forecasts become more remote; and this has been recognised in the table in which the forecast figures are presented, first by restricting the projection to the period ending 1971, and secondly by showing against the total figures an indication of the variation which would be produced under more favourable and less favourable assumptions, the modification for this purpose being as follows:

More favourable assumptions: the ultimate mortality and fertility reached in 1971 to be 10 per cent. lower and 10 per cent. higher than the standard respectively, with rateable differences for intervening years;

Less favourable assumptions: the same procedure but with factors 10 per cent. higher and 10 per cent. lower respectively in 1971.

(No variation is provided for the migration factor. Its response to changes in the other factors might well contain a self-regulating element to make it favourable when the others were unfavourable, and vice versa.)

'The deviations thus calculated are not propounded as indicating the extreme range of possible variation; they are no more than a calibration, as it were, which shows the effect of a 10 per cent. loading or discount and thus afford guidance to any user who may for his purpose desire to add a margin on either side of the standard forecast. Similar deviations in respect of age and sex subdivisions of the population would naturally be of a much higher relative order than those showing for the totals, but beyond pointing out that the influence of the birth factor will be confined to the youngest ages, it would hardly be safe to attempt to provide numerical indexes of the deviations in the separate groups.



# POPULATION

'Forecasts of the population of Gt. Britain . . . shown in the following table . . . make no allowance whatever for such change as might ensue from the possible introduction of a controlled population policy in regard to the birth rate or to migration.'

	<i>Actual popula- tion 1937</i>	<i>Forecast population</i>			
		<i>1941</i>	<i>1951</i>	<i>1961</i>	<i>1971</i>

## *Total Population and Deviations (thousands)*

Total - - -	46,008	46,565	47,501	47,192	45,980
Deviations* -	—	± 25	± 280	± 805	± 1,579

## *Age and Sex Groups (thousands)*

0-15 Persons -	10,179	9,573	9,054	8,433	7,600
15-30 { Males -	5,614	5,541	4,975	4,443	4,274
{ Females -	5,691	5,539	4,907	4,319	4,147
30-45 { Males -	4,913	5,260	5,436	5,099	4,413
{ Females -	5,438	5,637	5,557	5,069	4,351
45-65 { Males -	4,751	4,867	5,579	6,382	6,542
{ Females -	5,552	5,822	6,482	6,957	6,790
Over 65 Persons -	3,870	4,326	5,511	6,490	7,863

## *Age and Sex Groups (Distribution per 1,000 total)*

0-15 Persons -	221	205	191	179	165
15-30 { Males -	122	119	105	95	93
{ Females -	124	119	103	92	90
30-45 { Males -	107	113	114	108	96
{ Females -	118	121	117	107	95
45-65 { Males -	103	105	117	135	142
{ Females -	121	125	136	147	148
Over 65 Persons -	84	93	116	138	171

\* The positive and negative deviations on the basis adopted were found to be so nearly equal that they are shown above as a single figure preceded by a plus and minus sign.'

*Registrars-General of England and Wales and of Scotland.  
Current trend of population in Great Britain. Cmd. 6358  
1942 paras. 16, 17 (E)*

POPULATION  
Population forecast

	1940	1965-75
U.S.A. - - -	135 m.	—
Great Britain - -	46 m.	42 m.
Germany - - -	69 m.	64 m.
France - - -	41 m.	37 m.
U.S.S.R. - - -	175 m.	222 m.

BERLE, A. A. *The Times* 8th Feb. 1944 (S)

Trend of population in Gt. Britain

Period	Average annual increase		Annual increase		
	Numbers in thousands	Per cent.	Year	Numbers in thousands	Per cent.
1871/81	364	1.30	1931/32	253	.56
1881/91	332	1.06	1932/33	178	.40
1891/1901	397	1.13	1933/34	139	.31
1901/11	383	.98	1934/35	197	.43
1911/21	194	.46	1935/36	207	.45
1921/31	203	.46	1936/37	203	.44
1931/38	201	.44	1937/38	192	.42

'One feature of general interest disclosed by this arrangement is the abrupt change which occurred during the 1914-18 war period when the rate of increase which, prior to that time had been of the order of 1 per cent. per annum, dropped to rather less than half that figure, at which level it has been maintained ever since. In its relation to future conditions, however, the continued maintenance of the post-war 1914-18 rate of increase is no less important; it cannot be too clearly emphasised that the population at the present time is still increasing; not only has no decline so far been registered, but there is, as yet, no evidence of the gradual tapering away of the successive increases which may be expected to precede the attainment of a peak total from which any ultimate decline would fall to be measured.

'That does not mean that a future decline is unlikely. The birthrate

## POPULATION

since 1923 is definitely insufficient to maintain a stationary population. Though fertility data in respect of Great Britain are not yet available in the form necessary for a precise assessment of the deficiency, it can be stated that present rates are of the order of about 75 per cent. only of a full standard reproduction rate. But for the time being, this has not been reflected by a declining population, owing, firstly to the peculiar age shape of the present population which discounts both the effect of the birthrate deficiency and the operation of mortality, and secondly to the recent change in migration movements from an outward to an inward direction on balance.'

*Registrars-General of England and Wales and of Scotland.  
Current trend of population in Great Britain. Cmd. 6358  
1942 para. 4 (E)*

### Forecast of population for the London area

'... to use Mr. Pick's words, [in giving evidence to the Commission] "with the commitments already incurred the London Passenger Transport Board must certainly look forward to a population of ten millions, and in view of possible commitments for the completion of the transport system of the area (covering roughly a radius of 12-15 miles from the centre) it would seem as though a population of roundly 12 millions would ultimately be required for the support of the Board's undertaking".

'Against these figures are to be set population figures that were furnished by the Registrar-General, England and Wales, to Sir Charles Bressey for his Greater London Highway Development Survey (1937). The Registrar-General, while pointing out that any present forecast of the future population of Greater London must be largely hypothetical because of the uncertainties of the political and economic future, estimated that in the area covered by a 30-mile radius of Central London, the population (estimated as being 9,808,000 in 1934) might be expected to increase by about 5½ per cent. between 1934 and 1941 and by 4 per cent. between 1941 and 1951, representing a total population in 1941 of 10,350,000, and in 1951 of 10,760,000. From 1951 no significant further increase was contemplated. It will be noted that this estimate referred to a 30 mile radius of Central London as compared with the 12-15 miles radius taken by Mr. Pick.'

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 para. 192 (E)*

## POPULATION

## Population of the London area in relation to total population

Area	Population in 1801		Population (estd.) in 1937	
	Number of Persons	Percentage of population of Great Britain	Number of Persons	Percentage of population of Great Britain
Inner London* -	958,791	9.1	4,094,500	8.9
Greater London (including Inner London) - -	1,114,644	10.6	8,655,000	18.8
London and the Home Counties†	1,891,678	18.0	11,842,790	25.7

\* City and County of London.

† Including Greater London and Bedfordshire, Buckinghamshire, Essex, Hertfordshire, Kent, Middlesex and Surrey.

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 para. 334 (E)*

## Population and area, various Londons

	Area (sq. miles)	Resident Populations
City of London - - -	1 [677 acres]	10,580 (1931)
Administrative County of London - - - -	117	4,405,000 (1931)
Greater London (City and Metropolitan Police Districts) - - - -	693	8,655,000 (estd. 1937)
London Traffic Area and Greater London Regional Planning Area - - -	1,820	9,700,000 (estd. 1936)
London Passenger Transport Area* - - - -	1,986	9,811,000 (estd. 1937)
Metropolitan Traffic Area -	2,417	—

\* Roughly corresponding to a circle of 25 miles radius from Charing Cross.

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 paras. 331, 333 (S)*

## POPULATION

## Increase of population in the London area, 1801-1937

## (a) ACTUAL INCREASES OF POPULATION

<i>Period</i>	<i>Inner London*</i>	<i>Outer London*</i>	<i>Total Greater London</i>	<i>Great Britain</i>
1801-11	180,045	29,210	209,255	1,469,164
1811-21	240,188	32,254	272,442	2,121,637
1821-31	276,039	31,372	307,411	2,169,426
1831-41	293,695	37,897	331,592	2,273,149
1841-51	414,064	31,327	445,391	2,282,019
1851-61	445,153	96,832	541,985	2,312,167
1861-71	452,902	210,019	662,921	2,943,766
1871-81	568,901	312,119	881,020	3,637,728
1881-91	397,657	469,488	867,145	3,318,160
1891-1901	308,313	639,283	947,596	3,971,774
1901-11	- 14,582	684,538	669,956	3,831,450
1911-21	- 37,162	266,005	228,843	1,936,343
1921-31	- 87,520	811,261	723,741	2,063,241
1931-37	- 311,000	728,000	417,000	1,176,630

## (b) PERCENTAGE INCREASES OF POPULATION

<i>Period</i>	<i>Inner London</i>	<i>Outer London</i>	<i>Total Greater London</i>	<i>Great Britain</i>
1801-11	18·8	18·8	18·8	14·0
1811-21	21·1	17·5	20·6	17·7
1821-31	20·0	14·5	19·3	15·4
1831-41	17·7	15·3	17·4	14·0
1841-51	21·2	11·0	19·9	12·3
1851-61	18·8	30·5	20·2	11·1
1861-71	16·1	50·7	20·6	12·7
1871-81	17·4	50·0	22·7	14·0
1881-91	10·4	50·1	18·2	11·2
1891-1901	7·3	45·5	16·8	12·0
1901-11	- 0·3	33·5	10·2	10·4
1911-21	- 0·8	9·7	3·2	4·7
1921-31	- 2·0	27·1	9·7	4·8
1931-37	- 7·1	19·0	5·1	2·6

\*For definition see following page.

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 Appendix v (E)*

## POPULATION

## London area: gains and losses by migration

Period	Gain or loss ( - ) by migration		
	Inner London*	Outer London†	Total Greater London‡
	Persons	Persons	Persons
1871-81	108,000	198,000	306,000
1881-91	- 118,000	278,000	160,000
1891-1901	- 182,000	397,000	215,000
1901-11	- 553,000	321,000	- 232,000
1911-21	- 323,000 (a)	20,000 (a)	- 303,000
1921-31	- 360,000	604,000	224,000
1931-37	- 348,000	604,000	256,000

\* City and County of London.

† Zone between Inner London and Greater London.

‡ City and Metropolitan Police Districts.

(a) After allowing for losses by 1914-18 war deaths, estimated at 74,000, 50,000 and 124,000 for Inner, Outer and Greater London.

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 para. 340 (E.)*

## Marital condition of population

Persons aged 15 to 44.

Country	Year	Male				Female			
		Single	Married	Widowed	Divorced	Single	Married	Widowed	Divorced
Bulgaria -	1926	38.9	59.9	0.9	0.2	29.4	67.0	3.3	0.3
England and Wales -	1921	50.4	48.6	0.9	0.1	48.4	48.5	3.0	0.1
France -	1926	46.3	52.1	1.0	0.5	37.6	57.1	4.5	0.8
Germany -	1925	53.7	45.4	0.5	0.4	48.2	48.4	2.7	0.7
Italy -	1921	56.6	42.2	1.1	0.1	47.9	48.4	3.6	0.1
Sweden -	1930	62.6	36.4	1.0	0.1	55.7	42.3	1.8	0.2
U.S.A. -	1930	45.9	52.0	1.1	0.9	34.6	61.1	3.0	1.4

THOMPSON, WARREN S. *Population problems. 1935 Tables 10, 11 (E)*

## POPULATION

### Increase of urban population in the U.S.S.R.

“The rate of urbanisation in the U.S.S.R. is extraordinarily rapid, and an idea of the recent growth of some of the more important towns in European Russia is given by the following table :

<i>Town</i>	<i>Population in 1931</i>	<i>Percentage increase since 1920</i>
Moscow - -	2,781,300	171
Leningrad - -	2,228,300	208
Kharkov - -	521,500	126
Rostov-on-Don -	457,100	97
Nizhni-Novgorod -	350,300	230
Stalingrad - -	294,500	227
Saratov - -	277,500	47
Samara - -	220,400	25
Kazan - -	202,000	37
Ivanovo-Voznesensk	162,300	179

‘It appears that the limits of Moscow have not been definitely fixed, but it has been provisionally decided that the ultimate population of the region (which extends to a distance of 22 miles from the City centre) shall not exceed  $6\frac{1}{2}$  millions—a figure which is roughly double the estimated population of Moscow at the present time.

‘Leningrad, with a population of about  $2\frac{1}{2}$  millions, will be allowed to extend until a figure of  $3\frac{1}{2}$  millions is attained, but when that point is reached any further development must take the form of satellite towns. Each of these will be sited in the position best suited to the industry from which it derives its support, and will be separated from the metropolis by a belt of agricultural land. The planning of such satellites is a method frequently adopted in cases where the national plan requires the appreciable extension of an existing urban centre. At Stalingrad, for instance, there is a proposal to form a chain of five separate, but interdependent towns connected by road, by electric railway and by the Volga itself. The size of subsidiary towns, such as these, naturally varies with the circumstances, but the majority of them appear to be designed for a population of from 50,000 to 100,000 persons.’

DODD, K. S. *Planning in the U.S.S.R. Town Planning Institute Journal Vol. xx No. 2 1933 pp. 39-41 (E)*

**POPULATION**  
**Increase of urban population, U.S.A.**

<i>Year</i>	<i>National Population</i>	<i>Number of cities of over 30,000 population</i>	<i>Total Population of cities in previous column</i>
1924	113,727,000	248	39,981,105
1923	111,693,000	248	39,172,168
1922	109,893,000	261	38,736,657
1920	106,422,000	247	36,654,359
1910	91,972,266	184	27,316,407
1900	75,994,575	135	19,050,921

NOLEN, JOHN *Planning progress in the U.S.A., 1907-1928. Town Planning Institute Journal Vol. xiv No. 9 1928 p. 202 (E)*

**Increase of urban population in Canada**  
**'Indication of urban growth in Canada, 1871-1941.**

<i>Year</i>	<i>Urban population (thousands)</i>	<i>Urban population as % of total</i>	<i>Index of Growth 1901 = 100</i>		
			<i>Total</i>	<i>Urban</i>	<i>Rural</i>
1871	722	19.6	68.7	35.9	88.4
1881	1,110	25.7	80.5	55.1	95.8
1891	1,537	31.8	90.0	76.3	98.2
1901	2,014	37.5	100.0	100.0	100.0
1911	3,273	45.4	134.2	162.5	117.2
1921	4,352	49.5	163.6	216.1	132.1
1931	5,572	53.7	193.2	276.6	143.1
1941	6,252	54.3	214.2	310.4	156.5

'Data for 1871 to 1931 compiled from Census Monograph No. 6, *Rural and Urban Composition of the Canadian Population, 1938* ; and for 1941, from Bulletin No. A-1, Census 1941, Canada.'

*Advisory Committee on Reconstruction (Canada). IV: Housing and community planning. 1944 p. 317 (E)*



# POPULATION

## Proportionate populations of rural and urban areas

Country	1930*		1880	
	Rural	Urban	Rural	Urban
England and Wales	20.5	79.5	32.1	67.9
France - - -	50.9	49.1	65.2	34.8
Germany - - -	32.9	67.1	41.4	58.6
Italy - - -	30.1	69.9	46.1	53.9
Sweden - - -	67.5	32.5	84.9	15.1
U.S.A. - - -	43.8	56.2	70.5	29.5

\* 1930 or latest available.

THOMPSON, WARREN S. *Population problems. 1935 Tables* 14, 17 (E)

### Rural population

'Population of Rural Districts as defined for local government purposes - - - 7,200,000 approx.

Regarding any compact settlement of over 1,500 population as a town.

Total population living outside towns is probably - - - - - 6,000,000 approx.

Hence it is unlikely [for reasons stated in *op. cit.*] that the population of the open countryside, living outside villages, exceeds - - - - - 2,000,000 or 2,500,000

The population in villages is probably somewhere about - - - - - 3,500,000 to 4,000,000'

*Ministry of Works and Planning. Committee on Land Utilisation in Rural Areas. Report (the Scott report). Cmd. 6378 1942 para. 5 (E)*

# QUEEN ANNE'S BOUNTY

## History and functions

Queen Anne's Bounty was established in 1704 by Queen Anne in order to regulate the use of certain revenues for the augmentation of the incomes of the poor clergy. These revenues were the First Fruits and Tenths—i.e. a year's income of each benefice and one tenth of that income—which had been annexed to the Crown by Henry VIII. In 1704 the revenues amounted to £15,000. The Governors include archbishops, bishops, Law Officers, mayors and other persons—over 700 in all.

Capital grants were made to poorer benefices—beginning with the poorest—for the purchase of land. Various Parliamentary grants were made to the Governors by way of extra assistance. By 1920, the total capital augmentation by grant and benefaction had reached nearly £9,000,000. Since then administrative duties imposed on the Governors under the Tithe Acts, the Parsonage Measures and Ecclesiastical Delapidations Measures have absorbed most of the available income and capital grants have practically ceased.

From 31st March, 1927, all ecclesiastical tithe rentcharge became vested in Queen Anne's Bounty and this amounted to about £2,100,000 a year and was made up of many thousands of separate rentcharges. Queen Anne's Bounty undertook the whole of the administrative work involved by the tithe extinguishment scheme under the Act of 1936 and though the income received after that Act has been fully carried out will be about a quarter less than that obtained from tithe rentcharge on a full collection, it will be more secure.

The principal duties of Queen Anne's Bounty as they now are may be summarised as:

(1) The payment of nearly £2,500,000 annually to incumbents of benefices.

(2) Control of sales of parsonages and the provision of new houses.

(3) Acting as central authority in all delapidations matters affecting benefices, and making grants towards the payments for which the incumbents of poorer benefices are liable.

(4) Loans for improvements to parsonages and glebe buildings.

(5) Control of the sale of glebe originally acquired through the Governors.

(6) The collection of cornrents, annuities, under the Tithe Act, 1918, and other periodical payments.

(7) The management and investment of the Governors' corporate funds and of funds held for specific benefices.

HARE, EDGAR J. *A brief survey of the history and work of Queen Anne's Bounty.* 1945 (S)

# RAILWAYS

## Pre-war position and future prospects of railways

Before the war the railways were becoming increasingly restive at their growing loss of revenue caused by road transport competition. In November 1938 the railway companies proposed abolition of legal restrictions on their freedom to make such changes as they saw fit. In their report in March 1939 the Transport Advisory Council of the Ministry of Transport supported this view and arrangements accordingly were being made by the Government when war began.

The measures which the Transport Advisory Council suggested for safeguarding the interests of trade, industry and other forms of transport when railways were freed from legal restrictions on changes, included regular conferences between railways and traders. If such conferences failed to agree on a proposal by the railways to increase charges, the dispute should be referred to the Railway Rates Tribunal, who would hear both sides and fix such charges as it thought reasonable. Any trader, or body of traders, would have the right to petition the tribunal to reduce charges.

Sir William Wood of the L.M.S., and Mr. E. J. Missenden of the Southern Railway, are agreed that unification of the four main line companies would be a mistake, despite the advantages of the merger of what were once 120 companies into four. They consider that anything larger than one of the four companies would be difficult to administer, and Mr. Missenden thinks that the four companies stimulate each other in research work by friendly competition. But some adjustments in areas served might be made and some extension might be made in joint management, thus avoiding the need for separate staffs in areas served by two lines. Much rolling stock might be pooled and an increase made in the standardisation of rolling stock and equipment.

Many post-war improvements should be examined including electrification, higher speeds for passenger trains, and improvements in station premises and catering generally. Much scope exists for improvement in handling goods traffic. The railways will look for Government help in spreading daily and seasonal passenger traffic and believe there is no longer a case for the issue of workmen's tickets.

We suggest that the Government will have to take a much closer interest in the railways and other forms of transport than in the past, and that the present part-time Transport Advisory Council should be replaced by an expert whole-time body of four members, unconnected with but experienced in rail, road, canal and coastwise shipping, with an independent chairman.

## RAILWAYS

It should be the duty of this Council to take steps towards the co-ordination of all inland transport, and to prepare legislation to secure equality of charging and other conditions between the various branches of transport.

*Modern Transport. A plan for post-war transport. 1944 pp. 13-22 (S)*

## Railways: track mileage, number of vehicles, etc.

'Selected statistical returns of the railway companies (a) of Great Britain.

	1928	1931	1938
Mileage of lines for traffic at 31st December:			
Length of road - - - - miles	20,271	20,269	20,007
Running lines (single track) - - "	36,872	36,923	36,739
Total single track including sidings "	52,219	52,478	52,357
Rolling stock owned:			
Locomotives (b) - - - - number	23,603	22,310	19,702
Passenger-carrying vehicles (b) "	49,472	47,073	43,492
Pullman cars (c) - - - - "	202	227	219
Other coaching vehicles - - "	21,384	19,378	18,321
Merchandise and mineral vehicles (d) "	705,537	682,215	663,589
Service rolling stock (b) - - "	49,329	44,159	37,701
Engine mileage run (all traction):			
Train - - - - No. (thous.)			
Coaching - - - - "	251,336	253,720	287,370
Freight - - - - "	139,303	130,755	133,571
Total engine mileage run "	572,122	549,718	586,108
Passengers holding:			
Ordinary tickets - - - - "	609,092	581,166	604,466
Workman's tickets - - - - "	238,008	213,997	244,385
Freight traffic carried:			
Merchandise (excluding classes 1-6)			
Thous. tons	57,200	47,552	44,276
Minerals and merchandise (classes 1-6) -			
Thous. tons	61,572	47,114	47,380
Coke, coal and patent fuel - - - - "	187,328	173,680	172,773
Live stock - - - - Number (thous.)	19,121	13,721	8,421

(a) Excluding Manchester Ship Canal and Companies, etc., whose undertakings were transferred under the provisions of the London Passenger Transport Act, 1933. Information relating to the working of the London Passenger Transport Board will be found in the Annual Reports and Accounts of the Board.

(b) Excluding locomotives, etc., used exclusively for departmental purposes.

(c) Not owned by the railway companies.

(d) Excluding privately owned wagons, which numbered 637,670 at 28th July 1937.

*Statistical Abstract for the United Kingdom for each of the fifteen years 1924-1938 Cmd. 6232 1940 Table 253 (E)*

# RATING AND VALUATION

## Alternatives to the present rating system

It is not always possible to decide whether complaints against the present rating system are levelled against the system itself or at its administration.

One complaint is undoubtedly that the present system constitutes a 'tax on improvements' and is therefore a drag on initiative and enterprise, especially if the occupier has carried out the improvement before he has increased his 'ability to pay' sufficiently to pay both for the improvement and the increased rate burden.

Administration of the present system is criticised on many grounds, the most common being that it does not achieve uniform assessment and consequently does not lead to a uniform sharing of the rate burden.

It must be admitted that the Annual Value system has faults, but it has worked for centuries and, subject to improvements in its administration, is superior to any alternative system of which we have knowledge.

Local income tax has been claimed as the ideal system, but an examination reveals many defects, e.g. :

(a) the difficulty of apportioning a person's income where he occupies property in more than one rating area.

(b) the difficulty of assessing companies and firms where incomes are but aggregations of individual incomes.

(c) the amount paid by each individual ratepayer for the cost of certain services of direct benefit to him would not have any relationship to the amount of benefit received.

(d) if the tax were not collected locally and, to save expense, were part of the National Income Tax, then local interest in local expenditure might lessen.

Under such conditions, it would be extremely difficult for local authorities to budget ahead. Normally annual values have a great deal of stability and change slowly, while incomes fluctuate greatly and may lead to repayments for losses and other complications which are part of the income tax system.

The rating of site values is another suggestion which has been much discussed. Briefly the system is to value only the site for rating purposes and to ignore the buildings. The sums paid by the individual ratepayer would remain constant under both the site value system and the present system providing that the ratio of the value of the site to the full value of site and buildings were constant for all properties. But this is not so, and the object of the system is to redistribute the rate burden among ratepayers.

There is little variation in the ratio of site value to full value of house property and so each class of householder would continue to pay much the proportion of the rate burden as at present. But there would be a shift of burden from house properties to business properties, especially to those in the centres of towns and to those properties consisting chiefly of site—such as sports grounds.

It is important to consider whether the site value system of rating should take account of development value, which would cause an additional shift of burden to sites possessing development value. The essential feature of the present annual value system is that rates are paid in relation to existing user and can therefore normally be met out of income arising from that user. If development or potential value of sites is introduced there might be difficulty in collecting rates from owners or occupiers, and in any case it does not appear just to take development value into account. It has been suggested that a rate based on development value would urge owners to develop or redevelop their sites more quickly to the advantage of the community. A rate would not appear to be an apt weapon to secure good planning even if more rapid development or redevelopment could have been shown in recent years to have been desirable, which is at least doubtful; for too rapid development is at least as harmful as too slow.

The third system of rating which has been proposed is that rates should be related to the capital value instead of the annual value of real property. Under this system, also, there would be a shift in rate burden; this time from properties whose capital values are low in proportion to their annual values, to those that are high.

The general effect would be (1) properties let at weekly rents (e.g. smaller and older houses) would pay less and long-lease properties more; (2) well-built houses, which cost more to build, would sell for more and therefore pay more rates than a jerry-built house although the two houses might have the same letting value on the open market.

It would also be impossible to relate annual value to capital value for certain properties are never let, e.g. large houses with park and estate. Other large houses with no grounds might let but never sell.

Moreover, there are many forms of capital value. Market value—as arrived at for compulsory purchase and for death duties—or cost of reproduction, such as is arrived at for fire insurance, plus market value of the site. We feel that market value should be the only criterion, whether of annual or capital value, but that since the capital value system would produce more anomalies than it would remove, the present annual value system should remain.

*Rating Surveyors' Association. Memorandum on post-war rating and valuation. 1944 pp. 12-15 (S)*

## History of de-rating and present position

General and special reliefs from rating have been granted from time to time by Parliament ever since the passing of the Statute of Elizabeth. One of the first general reliefs, which emerged from the principle of payment according to benefit received, was that conferred by the Lighting and Watching Act, 1833, which provided that houses and buildings should always pay a rate three times as high as agricultural land. The Public Health Act, 1848, provided that agricultural land, and land covered with water or used in connection with canals or railways, should only be rated at one quarter of the full net annual value. With the consolidation of rates into 'The General Rate' by the Rating and Valuation Act, 1925, the abatements given by the Public Health Acts were continued by giving percentage deductions from the net annual value to arrive at rateable value in urban areas, and by charging a quarter only of the special rates in rural areas.

The Agricultural Rates Act, 1896, was the first derating measure in the modern meaning of the word. It enacted that agricultural land should only be rated at one-half of its annual value for all the ordinary rates to which the three-quarters exemption did not apply. The Agricultural Rates Act, 1923, increased this relief from 50 to 75 per cent., and the Rating and Valuation Act, 1925, extended the relief to cover agricultural buildings other than dwelling houses.

The Rating and Valuation (Apportionment) Act, 1928, together with Part V of the Local Government Act, 1929, and the Agricultural Rates Act, 1929, together provided for the total derating of agricultural hereditaments and the partial derating of industrial and freight-transport hereditaments—to which the relief was in most cases 75 per cent.

No logical reason for the present exemptions can be found. The properties which are at present exempted or partially relieved may be broadly grouped as follows:

(a) Properties occupied for the benefit of the public, e.g. churches and chapels, scientific institutions, certain hospitals.

(b) Properties which it is alleged do not receive full benefits from rates, e.g. land covered with water, agricultural land, railways.

(c) Properties relieved of rates by the Local Government Act, 1929, i.e., industrial and freight transport hereditaments and agricultural land and buildings.

(d) Properties occupied on behalf of the Crown.

The case against the exemption of particular properties is that such exemptions throw the cost of services to the exempted properties on to other ratepayers in the locality. This may be unfair in that the area benefited by, say, a hospital, may not be the area in which the

hospital is situated. Where properties serve a national purpose and are considered suitable subjects for exemption or relief from rates, it is considered that the relief should take the form of a direct subsidy from the Exchequer to the occupiers.

The relief of industry from rating was introduced in 1928–29 at a time of severe economic depression and it was believed that the relief would go a long way towards restoring prosperity. It is, however, a common experience that this relief, particularly in the case of smaller industrial properties, frequently passes to the landlords by way of increased rents upon renewal of leases.

*Rating Surveyors' Association. Memorandum on post-war rating and valuation. 1944 pp. 38–40 (S)*

## History of valuation and present system

The present system of rating has evolved over many centuries and changes have, in the main, been practical measures to meet changed conditions and requirements of social and local government services.

In early rates two principles of assessment can clearly be seen. The rates for sea defence, destruction of vermin, the rebuilding of Scarborough pier and in other cases, were intended to be assessed according to the proportion of benefit resulting to the ratepayers from the expenditure. Other rates—e.g. for building jails and relieving persons suffering from plague—were equally clearly intended to be assessed according to the ratepayer's ability to pay.

The Poor Relief Act of 1601 was the foundation of liability to poor rate and therefore to rates now levied. Under this Act, the churchwardens and certain householders were appointed Overseers of the Poor and were directed to raise from every inhabitant and every occupier of property sums of money for poor relief according to the ability of the parish. There was provision for appeal against assessment to Quarter Sessions. No basis for assessment was laid down in the Act and the old method of forming a general estimate of ability was first used. Gradually it became the general custom to rate according to the value of property occupied.

The Parochial Assessments Act, 1836, was the first Statute to provide that all hereditaments should be assessed on the basis of Net Annual Value and to define Net Annual Value as:

—The rent at which the hereditaments might reasonably be expected to be let, free of all usual tenant's rates and taxes . . . and deducting therefrom the probable average annual cost of the repairs, insurance and other expenses, if any, necessary to maintain them in a state to command such rent.



The Poor Rate Exemption Act, 1840, established finally that the Poor Rate should apply to all immovable and to no movable property.

On the grounds of convenience and saving of expense other rates soon became little but additions to the Poor Rate and many of the smaller rates were consolidated with the Poor Rate. The Sewers Rate alone retained a separate existence, as it has always been plain that the defence of land against inundation is for the benefit of those having an interest in land liable to be flooded and, consequently, in the apportionment of expenses, the amount of benefit expected to accrue has always remained the recognised principle in levying this rate.

The Union Assessment Committee Act, 1862, improved the provision for securing uniform and correct valuations of parishes in the Union of England and supplemented the definition of Net Annual Value in the 1836 Act by the definition of Gross Estimated Rental:

—The rent which the hereditament might reasonably be expected to let from year to year, free of all usual tenant's rates and taxes and tithe commutation rent-charge, if any.

This definition was repealed, but re-enacted in substance by the Valuation (Metropolis) Act, 1869, for London, and the Rating and Valuation Act, 1925, for the Provinces.

The Valuation (Metropolis) Act, 1869, provided for securing uniform assessment in London and introduced quinquennial revaluation.

The Rating and Valuation Act, 1925, made the Councils and County Districts the Rating Authorities responsible for valuations, and set up new Assessment Committees. In order to secure greater correctness and uniformity of valuation, County Valuation Committees were set up and given powers of making objections to and proposals in regard to individual assessments. A Central Valuation Committee was also constituted to advise on the promotion of uniformity throughout the country. Quinquennial revaluation was also introduced, and a simplified procedure for amendment of the Valuation Lists in the inter-quinquennial period by proposals which can be made at any time by Rating Authorities and persons aggrieved.

From time to time provisions have been made for general or particular reliefs and exemptions from liability to rates, such as the partial exemptions of agricultural land under the Public Health Act, 1848, and the Agricultural Rates Act, 1896, and the complete exemption of literary and scientific societies by the Scientific Societies Act, 1843. The greatest measure of derating was afforded by the Local Government Act, 1929, which relieved agricultural land and buildings completely from rates, and gave 75 per cent. relief to industrial and freight-transport hereditaments.

## RATING AND VALUATION

In deciding what proportion each member of the community should contribute to the cost of defraying local expenditure, it will be seen that two principles have been considered: (1) that he should contribute according to the benefit he or his property is likely to derive from the undertaking; and (2) that he should contribute according to his financial ability as estimated from the value of his possessions. Both these principles have in part been met by taking as a common measure the annual value of fixed property in the parish.

*Rating Surveyors' Association. Memorandum on post-war rating and valuation. 1944 pp. 9-11 (S)*

### Proposed reforms in rating and valuation

Administration and procedure are governed in the Provinces by the Rating and Valuation Acts, 1925-40, and the intention of these Acts was to secure correctness of valuation and, consequently, uniformity. It is indisputable that the Acts have in general failed to achieve their intention.

Some of the causes of failure are: inefficient administration in too many areas because the administrative unit is too small; electoral and personal influences on administration; attempts of some authorities to obtain an unfair share of the Block Grant and other subventions, by maintaining low assessments and by the same means seeking to avoid paying fair share of common charges to central and County funds.

As a result the rate burden is not spread fairly between ratepayers and between areas, and the distribution of Government grants becomes unfair.

Faults could be eliminated or greatly reduced if the following steps were taken: Valuation functions to be separated from Rating functions; a local authority, being itself a large ratepayer, should not, as an interested party, be a Valuation Authority; 'Valuation' is a technical question and should not be in issue at local elections; Valuation areas should be large enough to permit efficient administration; and differences in procedure between London and the Provinces should be abolished.

Alternative systems of valuation which have been suggested include: the creation of new valuation authorities for much larger valuation areas than at present; the creation of a Central Valuation Authority, largely representative of associations of local authorities, which would value all hereditments except those coming under the Railways (Valuation for Rating) Act, 1930, and employ all necessary staff; the transfer of rating valuations to the Land Valuation Department of the Inland Revenue.

## RATING AND VALUATION

We feel that rating valuation should remain a local function and, after full consideration of the three systems outlined above, consider that the system most likely to accomplish the desired end is one in which:

(a) valuation functions are quite separate from rating functions.

(b) valuation functions become the sole duty of new Valuation Authorities operating in larger and more comprehensive Valuation Areas.

(c) a Central Valuation Committee possesses certain executive powers.

In creating the proposed new valuation Areas an endeavour should be made to include in each not only urban areas but also suburban and agricultural areas, so that property of all types would be represented, and to avoid boundaries which run through urban areas. The expenses of the new Valuation Authorities would be raised by precept from Rating Authorities within each Valuation Area. The new Valuation Authorities should include representatives of local authorities within their areas and representatives of the County Councils.

The Central Valuation Committee would be constituted on the same lines as at the present, but with powers enlarged to enable it to enforce uniformity where there is reason to believe a Valuation Authority is not performing its duties properly. The Committee should have power to institute an inquiry, call evidence and advise the Ministry of Health thereon.

*Rating Surveyors' Association. Memorandum on post-war rating and valuation. 1944 pp. 17-21 (S)*

## RENT

### Control of rents

The report summarises the existing position under the Rent Restriction Acts and among the majority recommendations made are the following:

It may be necessary to continue control for at least ten years, but partial decontrol may be possible earlier and the situation should be reviewed after a few years.

Existing limits of rateable value within which houses are controlled should remain unchanged. Houses built after the war, and conversions into flats or tenements of houses not now controlled, should not be controlled. Houses built by local authorities under the Housing Acts should continue to be uncontrolled.

Legislation should be consolidated in a single Act and a simple memorandum issued on the legal position.

## RENT

Local authorities should be required to set up and maintain a register of the rents of all controlled houses in their area.

Rent tribunals should be established to determine fair rents.

A landlord should not be entitled to obtain, without proof of alternative accommodation for the tenant, possession of a house for occupation by himself or certain members of his family if he bought the house later than 1st September, 1939, and it should be made clear that 'purchasing' includes 'taking a lease of'.

Landlords who let, and tenants who, while retaining the tenancy, have sublet in whole or in part, houses which they themselves occupied on 1st September, 1939, and which they require for their own occupation, should be entitled to possession as of right, the Court having power to grant up to three months suspension of the order of possession.

Offering and requiring the payment of premiums for the tenancy of any house should be made illegal.

Local authorities should retain present powers to give information and to prosecute but should not give legal advice.

Certain recommendations are made concerning houses in rural areas, 'tied' cottages, etc.

*Ministry of Health and Department of Health for Scotland.  
Interdepartmental Committee on Rent Control. Report. Cmd.  
6621 1945 pp. 49-51 (S)*

### Amounts paid in rent by unemployed

#### *Amounts paid in weekly rent*

	<i>Free to 2/5</i>	<i>2/6 to 4/11</i>	<i>5/- to 7/5</i>	<i>7/6 to 9/11</i>	<i>10/- to 12/5</i>	<i>12/6 to 14/11</i>	<i>15/- to 17/5</i>	<i>17/6 to 19/11</i>	<i>20/- and over</i>
	%	%	%	%	%	%	%	%	%
England and Wales	1.5	8.0	27.5	29.6	17.8	7.3	4.6	1.7	2.0
Scotland -	6.6	23.8	39.7	22.7	5.3	1.2	0.4	0.2	0.1
London -	0.8	2.0	8.6	14.7	22.6	17.6	15.7	7.2	10.8

*Source: Unemployment Assistance Board Report, 1938, p. 198.*

*BEVERIDGE, WILLIAM H. Social insurance and allied services.  
Cmd. 6404 1942 Table v (E)*

# RENT

## Rent in relation to cost of houses

Description House	Capital cost of house at prices ruling at Mar. 1939	<i>Economic Rent based on Half-Yearly Loan Charges on a 60-year basis at rates of interest shown, and allowing £75 for Land, Roads, Sewers, etc.</i>					
		Interest at 3 per cent.		Interest at 3½ per cent.		Interest at 3¾ per cent.	
		On 1939 Capital Cost with £5 10s. p.a. for repairs, etc.	If Capital and Main- tenance Costs increase by 30%	On 1939 Capital Cost with £5 10s. p.a. for repairs, etc.	If Capital and Main- tenance Costs increase by 30%	On 1939 Capital Cost with £5 10s. p.a. for repairs, etc.	If Capital and Main- tenance Costs increase by 30%
	£	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1. Minimum pre-war standard -	335	7 10	10 2	8 1	10 6	8 5	10 11
2. Better pre-war standard -	400	8 8	11 4	9 1	11 9	9 5	12 3
3. Post-war house	467	9 8	12 6	10 0	13 1	10 5	13 7

*Ministries of Health and Town and Country Planning. Design of Dwellings Sub-Committee of the Central Housing Advisory Committee. Report (the Dudley report). Design of Dwellings. 1944 Part 1 Appendix 2-3 (E)*

## Incomes in relation to rent, York, 1936

<i>Net Income after deducting Rent and Rates</i>	<i>Rent including Rates. Shillings</i>	<i>Income (including amount paid for rent). Shillings</i>	<i>Rent as per cent. of Income</i>
Class A. Under 33s. 6d.	8-57	40-87	20-9
Class B. 33s. 6d. and under 43s. 6d. - -	8-47	45-74	18-5
Class C. 43s. 6d. and under 53s. 6d. - -	9-62	58-26	16-5
Class D. 53s. 6d. and under 63s. 6d. - -	9-65	70-47	13-7
Class E. 63s. 6d. and over - - -	9-87	97-60	10-1

ROWNTREE, B. SEEBOHM *Poverty and progress.* 1941 p. 262 (E)

# RENT

## Rent in relation to income and insurance payments

<i>Pre-service Income Shillings per week</i>	<i>Average rent per Household</i>		<i>Average Voluntary Insurance Payment</i>	
	<i>Shillings</i>	<i>Per cent. of Income</i>	<i>Shillings</i>	<i>Per cent. of Income</i>
Under 40	10.2	33.5	2.29	7.5
40-60	10.2	20.4	2.41	4.8
60-80	11.2	16.0	2.49	3.6
80-100	11.9	13.2	2.84	3.1
100-120	12.4	11.3	3.16	2.9
120-140	14.0	10.7	3.73	2.9
140 or over	15.3	8.4	4.55	2.5
All Households	11.3	15.1	2.64	3.5

From a random sample of more than 6,000 applicants for War Service Grants in 1939-42.

BEVERIDGE, WILLIAM H. *Social insurance and allied services.*  
*Cmd. 6404 1942, Table vi (E)*

## Rents of local authority dwellings

'A return has been obtained from local authorities in England and Wales showing the numbers and rents of houses and flats included in Housing Revenue Accounts at the 30th June, 1936. The return relates to 866,277 houses and the following table summarises the main results:

<i>Area</i>	<i>Number of houses and flats with rents (exclusive of rates, water charges, etc.)</i>				<i>Total number of houses and flats</i>
	<i>up to 5s.</i>	<i>5s. 1d. to 8s.</i>	<i>8s. 1d. to 10s.</i>	<i>over 10s.</i>	
County of London	960	10,973	23,634	49,626	85,193
County Boroughs	42,717	206,443	83,625	24,169	356,954
Non-County Boroughs -	17,458	74,385	29,609	21,812	143,264
Urban Districts -	21,245	100,368	38,208	17,780	177,601
Rural Districts -	29,888	59,866	11,514	1,997	103,265
England and Wales	112,268	452,035	186,590	115,384	866,277
Greater London -	2,616	20,221	36,441	73,814	133,092

'The percentage of dwellings let at rents up to 5s. per week varies

from 1.1 in London to 29 in rural districts, with an average for England and Wales of 13. The percentage of dwellings let at rents above 10s. per week varies from 1.9 in rural districts to 58 in London, with, again, an average of 13. These variations reflect the general rent levels in the different types of area. Except near London, half the rent levels fall within the category of 5s. to 8s. a week.

'The average rent of dwellings is 6s. in rural districts, 7s. 2d. in county boroughs outside Greater London, and 6s. 11d. in other urban districts. In Greater London just over a quarter of the dwellings let at rents over 12s. a week, the average rent of the remainder being 9s. 2d.

'Of the 564,303 houses let at rents, exclusive of rates, up to 8s. a week, it may be assumed that roughly 450,000 are let at rents, inclusive of rates, up to 10s. per week.'

*Ministry of Health. Rents of houses and flats owned by local authorities. Cmd. 5527 1937 (E)*

## RESTRICTION OF RIBBON DEVELOPMENT

### Provisions of the 1935 Act

Formerly every person owning land beside a road was entitled to immediate access to the road. The Restriction of Ribbon Development Act, 1935, enables Highway Authorities to restrict access on classified roads to a reasonably limited number of points.

Ribbon development has three disadvantages from the road user's point of view. (1) The development of property, and therefore increase of population, along main routes exposes more and more people, in their goings and comings, to the danger of high speed traffic. (2) Vehicles standing outside houses obstruct traffic. (3) The amenities of the road, from the traveller's view-point, are destroyed.

Under the 1935 Act it is unlawful (subject to a few exceptions), on all roads that were classified roads on 17th May, 1935, to provide any access to or from such a road, or to erect any building within 220 ft. of the middle of such a road, without the consent of the Highway Authority.

With the approval of the Minister of Transport the same restrictions may be applied to unclassified roads.

Power is also given to local authorities (under Section 17) to require, in approving plans for certain types of building, that such provision is made for access and for unloading of vehicles as will limit interference with traffic on adjoining roads.

TRIPP, H. ALKER *Road traffic and its control*. 1938 pp. 231-232 (S)

# ROADS AND STREETS

## Number of road accidents

Years	England and Wales		Scotland	
	Fatal	Non-fatal (so far as reported)	Fatal	Non-fatal (so far as reported)
1924	3,269	87,867	362	6,717
1925	3,535	102,704	436	8,798
1926	4,236	108,846	567	10,638
1927	4,581	117,239	614	11,509
1928	5,353	129,199	625	12,405
1929	5,817	132,529	688	12,767
1930	6,317	136,077	757	13,642
1931	5,855	159,257	644	15,321
1932	5,800	161,952	687	15,567
1933	6,321	169,417	680	15,364
1934	6,456	180,168	699	17,387
1935	5,690	172,864	624	16,714
1936	5,734	176,042	625	16,577
1937	5,779	174,098	654	15,837
1938	5,809	172,781	631	16,443

*Statistical Abstract for the United Kingdom for each of the fifteen years 1924-1938 Cmd. 6232 1940 Table 251 (E)*

### Road nomenclature and definitions

It is desirable that there should be uniformity of practice in terms used to designate the various classes of roads in relation to built-up areas, and that these terms should be based on the predominant traffic function of each class.

Every new road should be designed on the basis of its main purpose in a planned road pattern, and a similar course should be followed when existing roads are reconstructed.

The Committee adopted the following nomenclature according to the traffic function of various classes of roads:

*Arterial Roads.* Roads serving the country as a whole, or a region of the country, and linking up the main centres of the population or the various regions.



## ROADS AND STREETS

*Through Roads.* Roads carrying traffic having its origin outside the town, and its destination inside the town or *vice versa*.

*Local Through Roads.* Roads carrying traffic having its origin in one area of the town and its destination in another area.

*Local Roads.* All other roads in the town except development roads.

*Development Roads.* Roads, the primary function of which is to provide frontage for the development of land.

Other terms used in the Report include the following:

*Single Purpose Road.* A road designed for, and restricted to, one class of traffic, e.g. mechanically propelled vehicles, pedal cyclists, or pedestrians.

*Motorway.* A single purpose road restricted to the use of mechanically propelled vehicles.

*Intersections and Junctions.* 'Intersection' is used to cover all types of intersections and junctions. 'Junction' refers only to a single connection of one road with another, i.e. a 'T' or a 'Y' junction.

*Footway.* The part of the highway exclusively reserved for the use of pedestrians—generally parallel with the carriageway.

*Footpath.* A path solely for pedestrians, generally crossing fields or open spaces and not associated with a carriageway.

*Ministry of War Transport. Report of the Departmental Committee. Design and layout of roads in built-up areas. 1946 paras. 5-8 (S)*

### Classification and mileage of roads

'Classification of roads and schedule of mileage.'

	Class I Roads		Class II Roads		Other Roads		Total Mileage
	Mileage	Per cent. of total	Mileage	Per cent. of total	Mileage	Per cent. of total	
1937-38							
England and Wales:							
Administrative Counties:							
Trunk roads - - -	3,271	2.3	12,185	8.8	106,723	77.5	137,656
1st Class roads - - -	15,477	11.2	..	..	..	..	..
County Boroughs - -	1,587	11.5	760	5.5	11,404	82.9	13,751
Metropolitan Boroughs, City of London and L.C.C. - - -	292	12.4	125	5.3	1,933	82.3	2,350
Total - - -	20,627	13.4	13,070	8.5	120,060	78.1	153,757

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	Class I Roads		Class II Roads		Other Roads		Total mile-age
	Mile-age	Per cent. of total	Mile-age	Per cent. of Total	Mile-age	Per cent. of total	
1937-38							
Scotland:							
Counties:							
Trunk roads - -	1,188	4.9	3,866	16.1	13,779	57.5	23,957
1st Class roads - -	5,124	21.4					
Large Burghs - -	320	16.7	101	5.3	1,495	78.0	1,916
Total - - -	6,632	25.6	3,967	15.3	15,274	59.0	25,873
Total—Gt. Britain -	27,259	15.2	17,037	9.5	135,334	75.3	179,630

*Statistical Abstract for the United Kingdom for each of the fifteen years 1924-1938 Cmd. 6232 1940 Table 247 (E)*

### Design of roads in residential neighbourhoods

There are three main types of urban road: (1) those of an arterial or sub-arterial type; (2) distributive neighbourhood roads; (3) access roads. Roads of the first kind should not run through a neighbourhood or be flanked by housing which has direct access to it.

*Distributive neighbourhood roads* will not all have the same value or importance, but should be recognisable as such. This type should have a carriageway capable of taking two lines of moving traffic (each lane being 9-12 feet wide according to the character of the traffic), together with additional bays, 8 feet wide, where needed for standing vehicles. In addition, there should usually be two paved footways, each usually 8 feet wide (with variations where the road passes through open space). Extra widths should be added for planting. Widths may need to be varied, or additional service roads added, at places like local shopping centres.

*Access roads* serving groups of houses can usually be 16 feet wide. At least one, and usually two, footpaths will be needed, each 6 feet wide with extra for planting or verges. While 16 feet should be the minimum width for all intercommunicating roads, a smaller width is permissible for cul-de-sacs not more than 250 feet long and for minor loops. Turning spaces and parking bays should be provided at frequent intervals on all access roads. Minimum width for the former is 50 feet.

*Ministries of Health and Town and Country Planning. Design of Dwellings Sub-Committee of the Central Housing Advisory Committee. Report (the Dudley report), Design of Dwellings. 1944 Part 2 paras. 47-48 (S)*

**Design and layout of roads**

Long straight stretches of road make for monotony in driving and cause fatigue: gentle curves are preferable.

Road widths are becoming to some extent standardised, the basic unit being the width—10 ft.—which is needed for a single line or 'lane' of traffic. Two lanes are usually the minimum and greater widths should be in multiples of 2 in order to avoid a single lane being common to the two opposing traffic streams.

Cycle tracks should be 6 ft. wide as a minimum and where traffic warrants, increases should be in units of 3 ft. Footpath widths must vary widely from 4 ft. to 12 ft. and more.

Minimum standard widths (between fences) have been laid down by the Ministry of Transport as appropriate for all normal circumstances and these vary from 60 ft. for a single carriageway not exceeding 30 ft. wide, with footpaths, to 120 ft. for dual carriageways (each exceeding two traffic lanes), with footpaths and cycle tracks.

Normally a gradient of 1 in 30 should be a maximum, and long easy vertical curves of large radii should be aimed at.

In the case of horizontal curves a minimum radius of 1,000 ft. is now generally expected. Where a much smaller radius has to be used an additional width of carriageway will be needed—amounting to 2 ft. per traffic lane where the radius is less than 500 ft.

A minimum radius of 30 ft. is needed at corners. A sight line of at least 500 ft. should be aimed at on all curves, horizontal or vertical, and, at important cross-roads, buildings should be set back to a distance of 125 ft. from the central point.

Verges are valuable for separation of carriageways, footpaths and cycle tracks. It is desirable that verges, and central strips between carriageways, should be of a contrasting colour to the road.

Kerbs should be rough in texture and neither too high or too low—normally about 4 ins. They should be light in colour or, better, black and white in alternate sections.

Roads should, from the traffic point of view, be fully lighted or not at all; generally speaking, patchy lighting is worse than none. Where lamps of high power are provided it is important that there should be no dazzle from the source of light.

The relative merits of kerbside and central lighting systems have been much debated. The most appropriate arrangement has been found to be roadside standards with a suitable overhang of the lanterns.

Dual carriageways should be used wherever the road is expected to carry 400 vehicles in the peak hour. 27 ft. should be taken as the minimum width for a carriageway where there is no separate cycle track. Central strips, or reserves, between the two carriageways

should be wide enough to provide an overall width of 66 ft. between the two outside kerbs of the carriageways. Planting of the strips with low trees or shrubs will cut down headlight glare.

Service roads, constructed parallel with a more important thoroughfare in order to accommodate local traffic and standing vehicles, are of great value if incorporated in the design of shopping streets but should never be embodied in the design of a new traffic artery.

TRIPP, H. ALKER *Road traffic and its control*. 1938 pp. 205–230 (S)

### Layout of shopping streets

The main shopping areas of most of our cities have grown up on the main traffic routes; many of them are at the convergence of the radial roads and extend outwards along them for a considerable distance.

The juxtaposition on these roads of local shopping traffic, many pedestrians and local through or through traffic, creates conditions of congestion and danger, which constitute the most difficult urban traffic problem.

We hold that safety and convenience require shopping centres to be divorced from principal traffic routes, either by appropriating the streets as shopping streets or by the gradual removal of the shops. We therefore welcome the idea of the shopping precinct in which the interests of the pedestrian predominate, although we recognise that some time must elapse before shopping centres on radials can be converted or moved to traffic-quiet areas of this kind.

We regard development for shopping purposes at busy street intersections as objectionable. The desirable characteristics of a shopping street include:

- (i) Ample facilities for the safe and convenient movement of pedestrians.
- (ii) Absence of vehicular traffic other than that serving the shops.
- (iii) Ease of access to public service vehicles.
- (iv) Space in which shoppers' cars may wait for reasonable periods.
- (v) Proximity to car parks.
- (vi) Rear access for goods' vehicles.
- (vii) Continuity of shopping frontage on both sides of the street.
- (viii) Minimum width of carriageway compatible with (ii) and (iv) above.

Inadequacy of footways is a major defect of many shopping streets—we regard 15 feet as the minimum in principal shopping streets.

The extent to which the shopping precinct should be traversed by public service vehicles is a difficult and debateable question. The balance of evidence suggests that it is not unreasonable for public service vehicles to be excluded from a shopping precinct providing that this does not entail a walk of more than 300 yards from the public service vehicle route to the principal shopping streets. If public service vehicles are thus excluded it is essential that planning control should prevent the transfer of shops to the route used by the public service vehicles.

We suggest a waiting lane should be provided on each side of shopping streets in which shoppers' cars can wait for periods not exceeding 20 minutes.

Vehicular traffic to and from retail and wholesale markets, and between markets and the railway station, is a difficult problem in many large towns. Retail markets often spread over public highways, and vehicles serving them obstruct other traffic, and the removal of street markets elsewhere would in many cases be to the public advantage. Provision should be made in the design of markets for vehicles to stand off the highway, and wholesale markets in which the majority of goods arrive by rail should adjoin the railway goods station.

*Ministry of War Transport. Report of the Departmental Committee. Design and layout of roads in built-up areas. 1946 paras. 159-180 (S)*

### **The main street framework in central areas**

In most towns radial and ring roads form the principal routes for through and local through traffic. Where there is a substantial volume of arterial traffic passing through a town, provision should be made for a by-pass.

Where the volume of arterial traffic does not justify a by-pass, provision for it should be made on the outer ring road (or on the part of it used for arterial traffic), the design of which will then approach that of an arterial route.

The main radials are the connecting links with the arterial road system and should be designed primarily as through traffic routes.

The objectives to be aimed at on through and local through roads include: the reduction to a minimum of the number of road intersections and the good design of those which are essential; limitation of frontage development having direct access to the road; segregation of motor, cyclist, and pedestrian traffic and of opposing streams of traffic; prevention of obstruction by standing vehicles; and reduction to a minimum of pedestrian crossings on the level.

It would appear that the percentage of traffic entering British towns which is by-passable varies from 80 per cent. in towns of 10,000 population to less than 10 per cent. in towns of 500,000 to 1,000,000 population.

The point of convergence of radial roads is in most towns the crux of the traffic problem. The planner may have considerable freedom in the location of outer, intermediate, and even, in war-damaged towns, the inner ring road.

But the treatment of radials is much more difficult as they are likely to be built up along much of their length; the process of improvement must usually be a slow but continuous process of widening in association with rebuilding of adjoining development.

Ring roads can be divided into three classes—outer, intermediate, and inner.

In most towns, the primary function of an outer ring road is to serve the traffic of the town itself by linking up the outer communities and serving as a distributor between the radials.

It should therefore be located within the outer fringe of present and potential future development.

Intermediate ring roads primarily serve the needs of traffic, long-distance or local, which wishes to reach points between the outer and inner ring roads. They will normally be located in areas already partly developed and, to a larger extent than outer ring roads, will incorporate existing roads with all the diversity of use to which the latter are subject. Limitation of intersections with subsidiary roads and of frontage access should be aimed at, but complete restriction is likely to be possible only when an entirely new section of the road is constructed or large-scale redevelopment takes place.

Except in special cases, the inner ring road should not be regarded as a route for through traffic other than that which has its origin or destination in the central area. Its purpose is to promote the convenient use and amenity of the central area by deflecting from it all vehicles which have no need to traverse it, whilst affording convenient means of entry to those which require to call within the area. Its location and design is therefore closely bound up with the size, layout, and use of the central area.

Generally the central area will contain the public buildings and principal shopping centre which has grown up around the hub of the radial roads. In larger towns, public service vehicles comprise a large proportion of the vehicular traffic reaching the centre, and no adequate alleviation of congestion is likely to be obtained unless public service vehicles can, in whole or part, be diverted from the central area.

Nevertheless the prosperity of the central area depends upon its accessibility to users of public service vehicles.

If therefore public service vehicles are to be excluded from the central area, the inner ring road should be so located that passengers do not have to walk more than 300 yards to the principal shopping centre. It follows that, where public service vehicles are excluded from the central area, the area enclosed by the inner ring road should approximate to that of a circle with a diameter not exceeding 600 yards.

Where the activities to be provided for in the central area cannot be provided within this space—about 60 acres—, or where the diameter of the inner ring road must be greater than 600 yards, a limited number of public service vehicles should be arranged to enter the central area, and one or more picking-up and setting-down stations should be established in the area. These stations should be located so that roads leading to them do not form direct routes across the central area. If public service vehicle routes run across the central area, they will inevitably attract other traffic which properly should follow the inner ring road.

We are strongly of the opinion that the inner ring road should not be developed as a shopping centre, although we see no objection to display windows of shops which have their main frontages elsewhere. In this connection, it should be noted that an inner ring road which includes a waiting lane for public service vehicles on each side will have to be wider than is desirable for a main shopping street.

Intersections on the inner ring road should be designed in the light of three main principles: (1) discouragement of the passage through the central area of traffic which has no business there; (2) maintenance of free traffic flow in the ring; (3) provision for the safe and convenient movement of vehicles and pedestrians between the central area and the rest of the town.

Generally the intersections with the radials should be laid out as roundabouts, enabling traffic to enter and circulate on the inner ring; and effectively breaking the continuity of traffic movement on the radial inwards towards the central area.

*Ministry of War Transport. Report of the Departmental Committee. Design and layout of roads in built-up areas. 1946 paras. 117–154 (S)*

### **Comparison of clover-leaf junctions and roundabouts**

An analysis of the relative costs and land acreages required for simple road junctions and those of 'clover-leaf' or 'fly-over' types was made by town planning students at King's College, Newcastle-upon-Tyne. The following results were obtained:

*Clover-leaf junctions:* Two straight-leaf and two curved-leaf types

were chosen as representative. Type 'A', long straight-leaf, was estimated to cost £82,000 and to need 54 acres of land, and Type 'B', short straight-leaf, £80,000 and 44 acres. The respective figures for Type 'C', long easy curve, were £88,000 and 70 acres, and for Type 'D', circular leaf, £90,500 and 77 acres. A clover-leaf crossing designed on the half-cut and half-fill system cost £72,250 but only needed 30 acres of land. This type is only practicable when the underpass can be properly drained. The modified clover-leaf as recommended by the Ministry of Transport cost £64,500 but occupies only 12 acres of land.

A simple roundabout junction to the same roads was estimated to cost about £650 and to need an area of about 0.8 acres.

*German T-junction*: This well-known 'worm' type, designed for autobahnen, costs about £110,000 and needs 35 acres. A simple T-roundabout costs about £1,225 and needs about 1 acre.

*'Trumpet' junction*: Another German type, designed for the junction of an autobahnen and a lesser main road, costs £45,000-£50,000 and needs 17-20 acres according to whether whole-embanking or half-cut and half-fill is used. An elliptical roundabout, giving preference to the main road, costs about £250 and needs about  $\frac{1}{2}$  acre.

*Fly-over crossing between major and secondary roads with 2 spur roads (half clover-leaf)*: Costs about £43,000 and occupies 30 acres. It is unsatisfactory in that it has 6 direct collision points on or near the secondary road. An elliptical roundabout would cost about £250 and require 1 acre.

Note: The above costs and land acreages are those estimated to be needed over and above those involved in a straightforward unorganised crossing or junction of the roads. The maximum permissible gradient was taken as 1:30.

SHARP, THOMAS *Comparative analysis of road junctions.*  
*Town Planning Institute Journal* Vol. xxvi No. 3 1940  
pp. 93-96 (S)

### The design of roundabouts

The object of each vehicle when it enters a roundabout is (a) to reach the near side kerb at its own intended point of exit and (b) to reach that point by the nearest route. Unless its exit road is the next, in the direction of circulation, to that by which it entered, the nearest route will be a line drawn as close as possible to the circumference of the central island, or dead area, of the roundabout. Thus vehicles, proceeding in the same direction, are perpetually crossing each others tracks. Overtaking on either side is permissible, indeed necessary. These general interlacing movements are called 'weaving'.



The width of carriageways in the roundabout must be greater than that of any approach road, to facilitate weaving, but excessive width is a defect. The longer the weaving space along each limb or side of the roundabout the better. No two roads should enter the roundabout at or near the same point.

The shape of the roundabout determines rate of flow, and whether preference is to be given to traffic moving in a particular direction, e.g., a diamond shape imposes less check on traffic moving in the directions of its greater dimension. If angles are too sharp large vehicles will find difficulty in negotiating them.

A minimum weaving length of 120 ft. has been found desirable, and corners should have a minimum radius of 30 ft. Minimum width of island will therefore be about 150 ft. In redevelopment schemes in central areas where traffic is heavy, island sites up to 900 ft. or more may be needed.

A working rule for width of carriageway of a roundabout has been to make it one quarter of the total width of all approaching roads, working in multiples of traffic lanes. Where the roundabout is circular, the unit traffic lane in it should be taken as 12 ft., as greater road width is always needed on a curve.

It has been found that the islands of ten years ago are not large enough and jam very easily. Moreover, where small central islands are used, vehicles do not weave but only 'follow round'. There is little doubt that ideal conditions for weaving are obtained on the straight limb of a square-pattern roundabout and not on a curve. The island must 'interrupt' all roads: triangular roundabouts with roads as extensions of the sides are unsatisfactory. Roundabouts must be well lighted.

TRIPP, H. ALKER *Road traffic and its control*. 1938 pp. 233-236 (S)

### Roundabouts and overbridges

'An overbridge, which enables traffic on one route to cross that on another by means of a bridge, possesses the great advantage that there is practically no risk of accident and little, if any, reduction in the speed of vehicles when passing the junction. There are at all crossings twelve possible movements of traffic, as follows:

- (a) 2 between north and south.
- (b) 2 between east and west.
- (c) 4 right-hand turns.
- (d) 4 left-hand turns.

'An overbridge deals effectively with movements (a) and (b). In order to provide for traffic wishing to make left- or right-hand turns,

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with as little inconvenience as possible to the drivers and without cutting across the through traffic, it would be necessary to construct slip roads at each corner. . . . Traffic movements (c) would then be effected by passing the bridge, taking the first left-hand turn and continuing left into the desired flow of traffic, whilst traffic movement (d) would be effected by turning left before reaching the bridge, and thence in the desired direction.

'In the typical roundabout . . . it is assumed that the two roads are of equal traffic importance. All traffic on entering the roundabout would turn left and circulate round the central island until it reached the desired exit road, and as the layout would oblige drivers to proceed at an approximately equal speed, the necessary movement and weaving would take place in safety. The advantages and disadvantages of the two methods may be summarised under the following particulars:

	<i>Overbridge</i>	<i>Roundabout</i>
Area of land - - - - -	4 acres	1½ acres
Number of traffic cuts - - -	Nil	Nil, but weaving necessary
Rise plus fall on main traffic route -	20 feet	Nil
Rise plus fall on left-hand turn - -	13 feet	Nil
Rise plus fall on right-hand turn -	40 feet	Nil
Extra distance travelled,* main stream	Nil	15 yds.
Extra distance travelled,* right-hand turn - - - - -	220 yds.	65 yds.
Distance saved on left-hand turn -	40 yds.	20 yds.
Extra time taken, main stream† - -	Nil	22.3 secs.
Extra time taken, left-hand turn† -	2.8 secs.	1.5 secs.
Extra time taken, right-hand turn -	17.6 secs.	22.6 secs.
Cost of works - - - - -	£52,000	£6,500

\* As compared with ordinary crossing.

† Traffic assumed to travel at 15-30 m.p.h.

'From the foregoing it may be assumed that to construct an overbridge complete with slip roads at a road junction would cost, apart from the acquisition of land, some 9 or 10 times as much as a roundabout.

'The recent introduction of overbridges in the United States is probably due to the National Conference on Street and Highway Safety having drawn attention to the advantages of such a layout.

This Conference was impressed by the evidence before them that at least 50 per cent. of all motor accidents occur at road crossings, and they expressed the view that overbridges obviate most effectively the dangers caused by conflicting lines of traffic.

'Source: 6th Annual Report of the London and Home Counties Traffic Advisory Committee for the Year 1930-31.'

*Town Planning Institute Journal Vol. xviii No. 10 1932*  
*pp. 261-264 (E)*

### Street Lighting

We stated in the Interim Report that full advantage could not be obtained from technical recommendations unless attention was paid to administration and finance. We pointed out that, except in Scotland, there was no obligation on local authorities to provide street lighting. We recommend that responsibility for the lighting of classified roads, and perhaps certain other roads, might be confined, with certain exceptions, to large administrative units, and that some grants might be provided from national funds towards the cost of lighting certain roads.

The total annual cost of providing adequate lighting is estimated at about £400 per mile. If all classified roads in County Boroughs and 20 per cent. of other classified roads were so lighted the annual cost would be about £3½ millions. Since the Interim Report was issued the Minister of Transport has been empowered by Section 6 (4) of the Trunk Roads Act, 1936, to light certain roads.

We stated that the choice of road surfacing materials must be governed primarily by economy and the production of durable non-skid surfaces, but that in the choice of surfacing and surface dressing materials consideration should be given to lightness of colour and reflection characteristics.

We consider that the most practicable classification of roads as regards lighting requirements is into two groups, with an easily recognisable difference between the levels of lighting adopted for each. These groups would be:

Group A: Roads on which the standard of lighting should provide an ample margin of safety for all road users, without the use of headlights by motor vehicles.

Group B: All other roads which the responsible authority considers should be lighted.

No one standard of lighting would be entirely satisfactory for all the roads within one group. Some of the roads in the second group, which contains by far the greater mileage of roads requiring street lighting, may later develop into traffic routes.

For *Group A* routes the following general recommendations are made:

- (i) The mounting height should be about 25 ft.
- (ii) The average spacing should not exceed 150 ft.—preferably 120 ft.—and the maximum spacing in any one span should be 180 ft.
- (iii) The overhang of the lanterns should vary with the width of the carriageway. The distance between two rows of sources should not exceed 30 ft. if a dark centre to the road is to be avoided; and overhang should not exceed 6 ft. if the kerbs are to be sufficiently lighted.
- (iv) On straight roads, sources should be placed on both sides of the road in a staggered formation; additional central sources should be provided in every third span if the carriageway exceeds 40 feet in width.
- (v) On bends, the sources should be placed on the outside of the curve. Particular attention should be given to siting at bends and intersections.
- (vi) Central suspension should generally be avoided, as the area of high brightness along the crown of the road tends to encourage drivers not to pay proper attention to conditions at the sides.
- (vii) The lantern output per 100 ft. linear should be between 3,000 and 8,000 lumens, according to conditions on the highway and the type of installation.
- (viii) Excessive glare may be largely avoided if the ratio used to express the concentration of the light does not exceed six, or preferably five. The apparent intensity of the light fittings is no criterion whatever of the excellence of a street lighting system; high intensity is in fact a definite disadvantage unless accompanied by a high general brightness of the street surface and its immediate surroundings.
- (ix) Dual carriageways should be lighted as though each carriageway were an independent traffic route until further experience has been obtained of the best way to light these roads; lighting for service roads should be as recommended for *Group B* roads below.

For *Group B* roads the following recommendations are made:

- (i) The mounting height should be between 13 and 15 feet.
- (ii) Average spacing should not exceed 120 feet with a maximum of 150 feet for any one span. 100 foot spacing is desirable.
- (iii) Siting of posts should be on the same principles as recommended for *Group A* roads. No overhang is practicable with the mounting height recommended.
- (iv) Output of the lanterns should be between 600 and 2,500 lumens per 100 ft. linear. The lower limit would be suitable for quiet residential roads and the upper limit for roads which, while not coming

within the category of traffic routes, carry considerable pedestrian and local vehicular traffic.

(v) Part of the available light should be directed at the lower parts of fronts of buildings.

(vi) The ratio used to express the concentration of light should not exceed 4 and preferably 3.

Among other recommendations made, are the following :

Effective clauses dealing with the adequate maintenance of street lighting installations should continue to form an integral part of the British Standard Specification, and should be applied by those responsible for street lighting.

Normally there should not be a gradation of lighting between *Group A* and *Group B* roads as this would prevent clear differentiation between the two lighting levels. But where portions of traffic routes are lighted to a high standard as in some shopping areas, the lighting should be so graded that a motorist turning out of the traffic route is not subjected to an abrupt change in the visibility.

Street lighting should normally be continued from dusk to dawn—for approximately 4,000 hours per annum.

Attention should be given to the provision of artificial light-coloured backgrounds at appropriate places—such as at bends or where a wide bridge, or series of bridges, crosses the road.

Illuminated guard posts on refuges should be lighted in accordance with the recommendations given in the Report.

Street name plates should be so placed in relation to street lamps that they can be read without difficulty by drivers.

No attempt should be made to use street lamps of distinctive colour as warning signs.

Inadequately lighted traffic routes should be raised to the level recommended for *Group A* routes as soon as possible and not to a level intermediate between *Group A* and *Group B*.

Conditions during fog are so diverse and so different from normal conditions that they should not be taken into account in the design of normal street lighting installations.

*Ministry of Transport. Departmental Committee on Street Lighting. Final report. 1937 (S)*

### Planting in residential areas

There is almost bound to be an initial rawness about new building, particularly housing. The retention of as many existing copses, trees and hedges, as can be managed will do a great deal to overcome this. But this will not be enough: most sites will not possess nearly enough trees to meet the needs of their new building use. Not only should

new planting be undertaken, but expert advice should be obtained at the earliest stage of preparing a design and the actual planting and maintenance should be in skilled hands. Proper maintenance is essential.

Top-soil from roads and building sites should be set aside and made available for later planting and general gardening.

It is not possible to draw up a list of trees and plants which will be suitable for use almost anywhere: site, soil, climate and other factors have to be taken into account in choosing trees for a particular purpose and only a specialist can give the right advice. But some general principles can be set down.

Heavy foliage is out of place in a town: it screens buildings and cuts off light. Careful pruning can diminish these effects but it is wise to choose trees of slender and delicate foliage unless the street is exceptionally wide. Squares, wide streets and wide spaces at corners (providing a good field of vision is maintained for drivers) can accommodate larger trees. If continuity and unity of outline are sought, spacing in wide streets may be such as to allow contact between foliage of fully-grown trees. Streets of medium width should have upright rather than spreading trees. Parkways give an opportunity for freer planting.

Pruning and care of trees have a large effect on their value in design. Unintelligent lopping of deciduous trees often results in shapeless masses of foliage which destroy the character of the tree, while skilled treatment can preserve the habit of the species and induce the open, slender growth often needed in trees which are close to buildings. Very occasional formal pleaching can give a striking and pleasant effect.

The occasional use of shrubs, either singly on wide grass margins—where they may help to prevent the establishment of ‘unofficial’ paths—or in clumps, as on spaces between carriage-way and footpath at street junctions, can enliven domestic streets. So may the planting of flowers, informally in verges, more formally in the space between dual carriageways, or on the wide pavements of a shopping neighbourhood. On paved spaces the use of large movable tubs or boxes of wood, earthenware or concrete is a pleasant variant. It is a feature of the much-admired planting of the Stockholm Municipal Parks Administration.

The question whether grass should be grown on the verges of pavements is a difficult one. A narrow grass verge is difficult to maintain: it is doubtful whether one of less than 5 ft. can be successfully maintained and in any case the local authority should do the maintenance. An obligation on adjoining occupiers to maintain is not likely to be capable of proper enforcement. A well-kept grass verge is

very pleasant but its universal use would over-standardise the character of our streets. Gravel, setts, cobbles and other materials look well alongside a flagged path, especially where the verge is narrow, and they can be used to supplement the path where grass cannot be without damage. And grass is not the only treatment for squares and other small open spaces. A small paved square can be very attractive.

Probably the greatest single obstacle to a successful overall appearance in domestic streets is the ubiquitous garden wall or fence. A high wall, spiky railing and tall privet hedge are over-elaborate defences for the small front garden. It has been recommended that front fencing should be omitted, and it is suggested that this should be done where development is at all continuous: in particular the concrete post and wire fencing, which so disfigures much inter-war housing, should be avoided. If some division is needed between front garden and pavement a wall or hedge 18 inches high would suffice.

For division between back gardens, however, a much higher and a solid fence is desirable if privacy is to be maintained. A wall 5 feet high may be the ideal solution if wood fences are undesirable because of maintenance costs. As the cost of such walls is considerable, the most practicable proposition may be to build such a wall for such distance, 7 or 8 feet, as will assure the privacy of windows, and beyond that to plant a substantial hedge. But this planting must be done by the developer.

*Ministries of Health and Town and Country Planning. Design of Dwellings Sub-Committee of the Central Housing Advisory Committee. Report (the Dudley report). Design of Dwellings. 1944 Part 2, paras. 59-68 (S)*

### Street planting

The desirability of planting a particular street should be considered from many viewpoints: height and use of buildings, set-back, whether continuous or detached, width of street, position relative to industrial areas, high or low level of site, soil and orientation. Serious mistakes in the choice of trees can be avoided by attention to these things, for street trees have to be able to overcome many adverse conditions.

Mistakes in planting include placing broad growing trees such as sycamores and chestnuts in narrow streets; these have to be constantly trimmed and wheatley elms or silver birch would have been more suitable. Again, a broad cobbled space is planted with silver birch, where a substantial tree like a plane or maple should have been used. Trees are out of place in a shopping centre unless an

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exceptionally wide pavement or central strip is available. Shops and offices must have plenty of light on the ground floor. In warehouse and heavy trades areas it is usually a mistake to try street planting.

Minor residential roads or culs-de-sac should either be kept free of trees or planted with small growing ones—thorns, acacias or prunus—which can be kept well trimmed back. The best position for these is on the fence line, since, if planted on the sidewalks, their flowers may encourage damage while on the fence line they appear to be private property.

In major roads, proper street trees should be at least 20 feet from the buildings and usually all of the same kind in one street, but not of the same kind in many streets in the same district. Shrubs and small trees in tubs can do much to brighten, in the summer months, areas where permanent trees cannot be planted.

If trees are set on the fence or property line they do not interfere with street lighting, their soil bed will be better, the street will appear broader and more spacious, and their private position will help to protect them. If placed between pavement and kerb (in strips 10 ft. wide if possible and not less than 4 ft. 6 ins.) they shade both pavement and street, give protection against dust, and, if properly trimmed, will not greatly interfere with the lighting, providing lamps are set near the kerb. The aesthetic effect of the two lines of trees being nearer each other is also better. In wide roads with narrow space before buildings the trees are better in the roadway; when *vice versa* they are better on the property lines.

The number of trees really suitable for street planting is small. Washington has tried 30 kinds since 1872 but has reduced them to 10 or 12; and in Paris only about a dozen kinds are represented by over 100 specimens. Besides being hardy, straight and symmetrical and giving plenty of shade, a street tree should not have roots which block drains or break up the pavement and should not shed bark, fruit or flowers. It should also be long-lived and suited to the local soil.

Trees which are good smoke-resisters:

Ash	Maidenhair Tree
Acacia or Black Locust	Mountain Ash
Ailanthus	Maple (Norway)
Lime (Crimean)	Oak (Red)
London Plane	Oak (Scarlet)
Thornless Honey Locust	

also, in special circumstances:

Catalpa	Poplar
Laburnum	Sycamore



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Additional species for more favourable conditions :

Almond	Lime (Red Twigged)
Birch	Maple (Red)
Cherry (Double flowered)	Maple (Schwedler's)
Elm (Cornish)	Oak (Evergreen)
Elm (Huntingdon)	Oak (Pin)
Elm (Wheatley)	Oak (Turkey)
Elm (Wych)	White Beam
Hackberry	Service Tree
Lime (European)	Thorns

also, in special circumstances, Horse Chestnut.

Trees for the seaside :

Ash	Oak (Evergreen)
Birch	Oak (Turkey)
Elms	Poplars (except Balsam)
Laburnum	Service Tree
Maples	Sycamore
Mountain Ash	Thorns

Trees for chalk soil :

Acacia	Maple
Ash	Oak
Birch	Poplar (many varieties)
Laburnum	Sycamore
Lime (Red Twigged)	White Beam.

MATTOCKS, ROBERT H. *Street Trees. Town Planning Review*  
Vol. x No. 4 and Vol. xi No. 1 1924 (S)

### Planting in streets. Unsuitable placing and species

It seems impossible to avoid damage to existing trees in building a new town. Filling in of ditches, cutting off natural water channels in laying sewers, and creation of impervious surfaces appear to be the causes of this damage rather than direct injury to roots and bark. At Welwyn, ashes suffered first, then oaks and elms least. The trees survived when open greens or gardens could be left around them.

From an engineering point of view, new planting to replace such losses is sometimes marred by injudicious choice and siting. Planting in verges is only suitable where traffic is light, on traffic routes the fence line seems the better place. In shopping centres no trees should be planted in the paved footways, space under which should all be kept for services. In any case, pedestrians need the full width of the

footways and fallen leaves on a wet pavement can be very slippery. Trees in such areas should be in a strip in the centre of the streets or in groups outside the street boundaries.

There are many more trees suitable for planting in garden cities than in older towns, but some varieties should not be placed in roads or streets. The poplar has a bad reputation for breaking pavements and service runs with its shallow wide roots. The elm should be barred for its heavy head, wide roots, great height and liability to fall in a gale without warning. The ash has a thin foliage and rarely thrives in streets. Beech and larger oaks are too big for most streets. Chestnuts drop a great deal of litter.

The planting of clumps of shrubs where they obscure sight lines of traffic is far too common. At Welwyn the difficulty has been surmounted by rose beds. The bushes, which are much admired, are never despoiled and do not grow high enough or thick enough to obscure sight lines. But they are expensive in first cost and maintenance.

JAMES, W. E. *Engineering aspects of garden city development. Town Planning Institute Journal Vol. xvi No. 3 1930 p. 78 (S)*

#### **Traffic surveys, growth of traffic, and road capacities**

The main purpose of a traffic survey is to determine the volume, direction, type and characteristics of traffic over an area as a whole or some part of it, and to apply the results to the nature and scope of the road proposals under review.

The traffic census, which before the war was taken triennially by enumerators stationed at selected points (approximately at 3 mile intervals) mainly outside built-up areas on Class I and Class II roads, was primarily a volumetric one to ascertain the number of vehicles of various types passing the census points in both directions during 16 hours from 6 a.m. to 10 p.m. on seven consecutive days in August. In the census taken on Class I roads in 1938, the count at several hundred points was continued throughout the 24 hours to record hourly variations in flow and night traffic.

For the design or re-design of the urban road system an 'origin and destination' census is of primary importance. The results will indicate both the total volume of traffic to be dealt with, and the proportion which can be diverted from the town or that part of it which is under review.

In addition to a volumetric and origin and destination census, information on other matters may sometimes be needed. These matters include the extent and direction of daily movement of people by road

## ROADS AND STREETS

into and out of the area; public service vehicle routes; the extent, and points of interchange of goods and passenger traffic between road, rail, and waterway systems; and the location and nature of obstacles which impose delay to the free passage of traffic.

The increase in the total number of motor vehicles during the seven years 1923-1929 averaged 179,000 per annum, and during the seven years 1933-39, 166,000 per annum. Thus the annual increase was reasonably uniform before and after the depression of 1931.

The increase is chiefly attributable to private cars, which in 1939 formed nearly two-thirds of the total of all licensed motor vehicles. Motor cycles decreased steadily in number from 1930. Pedal cycles have been variously estimated at between 8 and 9 millions in number; and an apparent decrease in the number in use between 1935 and 1938 has been offset by an increase during wartime.

There are many indeterminable factors governing the future of traffic growth, but if vehicular traffic (excluding pedal cycles) increases after the war at the same rate as in the ten preceding years, it will rather more than double itself in twenty years.

The following figures relate to 1939:

	<i>Motor vehicles per 1,000 of population</i>	<i>Motor vehicles per mile of road</i>
U.S.A. - -	221	9.7
New Zealand - -	164	3.0
Canada - -	131	2.3
Australia - -	106	1.6
Gt. Britain - -	61	14.5
France - -	54	5.7
Belgium - -	28	11.6

An empirical formula which takes into account such factors as stopping distances, drivers' reaction time and so on, gives a figure per traffic lane of 1,000 vehicles per hour at 4 m.p.h.; 1,600 at 10 m.p.h. and a maximum of 1,800 at 20 m.p.h. Capacity falls away at speeds above 20 m.p.h. because of the need to maintain a greater distance between vehicles. No one formula will suit all conditions.

As a result of observations extending over many years, the Ministry of Transport came to the conclusion that, under normal town traffic conditions, the maximum permissible capacity of a road with two lanes in each direction averaged 550 vehicles per lane per hour; but

where thoroughfares were obstructed by standing vehicles 300–400 vehicles per lane per hour was all that could be expected.

On a motorway, a reasonable capacity for a two lane unidirectional unobstructed carriageway may be safely taken at 1,000 vehicles per lane per hour, and 900 vehicles for a similar three lane road.

*Ministry of War Transport. Report of the Departmental Committee. Design and layout of roads in built-up areas. 1946 paras. 35–58 (S)*

## ROAD TRANSPORT

### Definitions of road traffic and transport

‘The whole problem of regulating, co-ordinating and controlling the use of the roads falls under two distinct headings, viz. transport control and traffic control.

“Road transport” relates to the general science of carriage and conveyance by road—the design, survey and maintenance of the machinery of portage. The question of the fitness of the vehicle, the training and fitness of the driver, the selection of the route to be taken, the extent to which the road should be used rather than the railway—or, in other words, all matters that can be settled uncontestedly before the vehicle goes on the road—all these are items of transport control. The moment, however, that the vehicle is launched into the general arena, amid all the other moving units, it has become a traffic unit.

“Road traffic” is a term applied collectively to the passing to and fro of goods, passengers and vehicles over the streets and roads. In other words, “traffic” represents the whole interplay of vehicles and other movement on the roads, the general “give and take” as between public and private vehicles, goods vehicles, pedestrians, drivers, animals and everything else. Traffic units are in a state of constant flux, and to a certain extent control must be of a “day to day” character, being varied as the traffic varies or is likely to vary.

‘Not only are transport control and traffic control distinct but they may at times be at mutual variance. For example, a transport operator, may, for perfectly sound “transport” reasons, have to be allowed to work his vehicles in an area which, from a “traffic” point of view, is over-congested already. Equally, however, the two forms of control can be of mutual service; for example, the suppression of unnecessary services will simplify and assist traffic movement, while improvements in traffic control which promote orderly movement will, in turn, expedite transport.’

TRIPP, H. ALKER *Road traffic and its control*. 1938 p. 2 (E)

**Alternative method of road passenger transport**

With the outward spread of cities, the problem of passenger transport has become more and more difficult. The traffic peaks, morning and evening, tax the resources of the street to the uttermost.

By far the best agent for bulk passenger transport is the railway, either surface or below ground, on account both of high carrying capacity and isolation of its tracks from the public highway.

For local movement of inhabitants in a city, road services are essential; for the transport of daily workers the ideal is that, while intimate local distribution in the centre is done by road, the road services shall be ancillary to a track system which is entirely isolated.

From a traffic point of view the most important features of a road passenger vehicle are the speed with which it can be loaded and got away, the amount of obstruction it causes to other vehicles when under way or at rest and its manœuvrability. At one time the tramcar had a great advantage in that it could carry many more passengers per vehicle than the bus or trolley bus. This advantage has now almost gone and the tramcar is wanting in all other respects except that it can be more easily reversed than its rivals at terminal points.

Experience indicates that when once an operator begins to introduce dirigible transport he never reverts to the fixed-rail idea. In the majority of English towns which possess tramways, conversion is in progress or contemplated. The most notable exception is Liverpool where the view is taken that with a working population on housing estates 6 or 7 miles out, tramcars are the only vehicles who can carry the workers at 2s. a week, which is as much as they can afford to pay. In Glasgow, also, none of the tramways has yet been abolished.

No settled ratio exists between the population of cities and numbers of taxi cabs as the following table shows :

		<i>Approx. number of cabs</i>	<i>Population</i>
New York	-	24,000	7,346,000
Paris	-	14,000	2,871,000
London	-	8,000	8,360,000
Berlin	-	3,000	4,250,000

The main traffic questions raised by cabs are to locate ranks where they will not obstruct other traffic and to prevent 'loitering for hire'.

TRIPP, H. ALKER *Road traffic and its control*. 1938 pp. 184-188 (S)

**Pre-war position and future prospects of road transport**

Except for rolling stock design and dimensions, road carriers were free from State control until the passage of the Road Traffic Act, 1930. Under this Act road passenger services were to be administered by Area Traffic Commissioners. Under the Road and Rail Traffic Act, 1933, the Chairman of each Commission was made responsible for imposing a licensing system for goods vehicles divided into three categories: A Licenses, or public carrier's; B, or limited carrier's; and C, private carrier's, i.e. a firm which delivers its own goods in its own vehicles. Renewal of A and B Licenses is subject to objection by other transport operators on the grounds that enough facilities already exist. In consequence, most renewals were strenuously opposed by the railway companies to the expense and inconvenience of the applicants.

Shortly before the war the Transport Advisory Council set up a Road-Rail Conference which showed that agreement could be reached between the two interests on many points of difference. In particular a system of rates was foreshadowed which would allow the two forms of transport to charge different rates where this was appropriate, and this system would have to be legally enforceable.

In its 1937 report, the Transport Advisory Council stated that the internal organisation of the road transport industry was an essential preliminary to further progress. In 1938, 51 per cent. of A licenses and 73 per cent. of B licences operated only one vehicle, and the average number of vehicles per undertaking was  $3\frac{1}{2}$  in the A category and  $1\frac{1}{2}$  under the B. Clearing houses co-ordinated the activities of many of these small firms. We do not agree that the Ministry of War Transport Road Haulage Organisation, which switches large numbers of vehicles at short notice from one part of the country to another, is suitable for peacetime. Suggestions made to meet the need for internal organisation include the restriction of undertakings which operate less than 60 tons unladen weight to local work, and the suggestion that licenses should be conditional upon observance of a recognised rates schedule and conditions of carriage.

If restrictions on the charging powers of railways are removed, certain alterations should be made in road vehicle licensing procedure to remedy the present position whereby all other forms of transport can object to road licenses, while hauliers have no right to object to the facilities provided by any other form of transport.

Unlike the road haulage industry, road passenger transport can be said to be on a stabilised basis. Ownership and working arrangements are highly complex but the service to the public is probably the finest in the world. Public requirements are so diverse and liable to quick change that they can only be met by detailed local super-

vision, and it is probable that the bus industry owes its success between the wars to its organisation by areas.

In 1937, the last year for which complete figures are available, 51,000 buses carried 6,555 million passengers 1,297 million miles. 261 undertakings with 15 or more vehicles operated 36,951 buses. Of the total of 4,798 public service vehicle operators, 4,537 owned 14 or fewer vehicles and 1,846 owned only one vehicle.

War has thrown a big burden on bus services—up to 80 per cent. over pre-war—while fuel and labour shortages and arrears of maintenance have caused a lowering of standards.

The main line railways have made large investments in road passenger transport shares under their Acts of 1928, but these in no case now exceed 50 per cent. of the shares so that the railways, though represented on the boards, do not 'control' the bus companies. Liaison committees arrange collaboration between road and rail.

Competition between operating companies of the large groups is avoided by agreeing to the boundaries of their respective areas. It is usual to ensure that all parts of the area are equitably served, even if this means that a large proportion of the services operate at a loss. For this reason inter-urban concerns usually try to obtain a certain amount of the profitable town operation, but it is also usual to leave development of services in thinly populated country to small operators, who may be able to combine market-day facilities with other business.

This spirit of reasonable accommodation extends to relations between companies and municipalities where joint working, pooling of receipts or protective fares are used according to the particular situation and subject to the scrutiny of the Traffic Commissioners.

London Transport is not the only example of the principle of the public board, although it is the only one with such independent machinery for the election of members, entirely removed from political influence. The Northern Ireland Transport Board was probably based on London Transport, although conditions in Ulster are not relevant to Great Britain and there were many earlier examples of coalitions of the transport interests of local authorities. The advantages of amalgamation of transport interests over a region seem balanced by the disadvantages. Many protective fares and express workings, which are commonly held to result from divided ownership, would have to continue if the traffic is to be handled efficiently, and savings in overhead charges must be set against a probable slower response to changes in local needs.

Long distance coach services were often alleged to be competitive with the railways, but a high proportion of passengers made inter-

## ROAD TRANSPORT

mediate journeys not easily covered by rail. Some routes gained business through their scenic beauty, but for the majority it was greater convenience as compared with the train service which drew the traffic. Operation and finance were usually pooled between concerns in whose areas the coaches picked up and set down passengers and the railways were therefore parties to the traffic through their share holdings in pool members. Revival of the coaches after the war must largely depend on the alternative facilities offered by the railways, and if these are modest for some time revival of the coaches should not be hindered.

*Modern Transport. A plan for post-war transport. 1944 pp. 23-35 (S)*

### Tramways and trolley vehicles

'Statistical returns of tramways and light railways, and trolley vehicles, Great Britain except London (a).

	<i>Tramways and light railways</i>		<i>Trolley vehicles</i>	
	<i>1929-30</i>	<i>1937-38</i>	<i>1929-30</i>	<i>1937-38</i>
Mileage of lines:				
Route miles open for traffic - miles	1,979	1,008	169	445
Track miles open for traffic - miles	3,390	1,860	—	—
Cars owned - number	11,174	7,207	492	1,559
Average seating capacity - number	59.07	61.64	40.34	51.33
Passengers carried:				
Number of single journeys paid for; number in thous. -	3,531,950	2,357,471	127,462	496,851
Car miles run; number in thous. - - -	289,117	200,746	13,671	47,232
Average fare paid per passenger journey; pence	1.35	1.30	1.47	1.38



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(a) The table excludes the Local Authority and Company Undertakings transferred to the London Passenger Transport Board on 1st July, 1933. Information relating to the working of the London Passenger Transport Board will be found in the Annual Reports and Accounts of the Board.'

*Statistical Abstract for the United Kingdom for each of the fifteen years 1924-1938 Cmd. 6232 1940 Tables 256 and 257 (E)*

# SCHOOLS

## Number of elementary schools, pupils, etc.

'Public elementary schools maintained by local education authorities in England and Wales.

	1924	1931	1938
1. Number of departments (a) -	31,188	30,363	29,224
2. Number of children in average attendance per department -	161	162	155
4. Average attendance as percentage of average number of children on the registers -	88.7	89.0	89.0
5. Number of children on the registers - <i>thousands</i>	5,602	5,514	5,035
6. Number of children under five years - „	211	158	165
7. Number of children of fourteen years and over - <i>thousands</i>	169	156	161
8. Percentage of boys - „	50.6	50.7	50.6
9. Number of children who left during the year - - -	666,706	583,340	570,790
10. Percentage proceeding to full-time schools of other types -	12.3	16.3	19.3
11. Number of classes - - -	147,177	152,062	145,281
12. Percentage of classes with more than 40 and not more than 50 children on the register	27.6	33.6	(d) 30.7
13. Percentage of classes with more than 50 children on the register - - - - -	17.0	5.6	(e) 1.4
14. Number of full-time teachers in regular employment -	163,221	168,934	166,674

*Note.*—Particulars in the table relate to 31st March, or, in the cases of sub-heads 4, 9 and 10, to the year ended 31st March.

(a) A department is a group of children under a separate head teacher, a school often consisting of more than one department.

(d) The percentage for 1938 covers all classes with more than 40 children on the registers. (e) Included in (d) above.

*Statistical Abstract for the United Kingdom for each of the fifteen years 1924-1938 Cmd. 6232 1940 Table 41 (E)*

## SCHOOLS

## Number of secondary schools, pupils, etc.

	1924	1931	1938
1. Number of schools - - -	1,270	1,367	1,398
2. Number of full-time pupils on 31st March - - - -	349,141	411,309	470,003
4. Percentage of boys - - -	51·8	52·8	52·6
5. Percentage of pupils aged 16 and under 17 - - -	9·6	10·3	9·5
6. Percentage of pupils aged 17 and over - - - -	6·6	7·3	6·2
7. Percentage of ex-public ele- mentary school pupils - -	67·6	72·0	77·6
9. Number of pupils who left dur- ing the year ended 31st July and proceeded to some other type of full-time education (a)	<i>n. a.</i>	<i>n. a.</i>	13,719
12. Number of full-time teachers on 31st March - - -	18,658	21,694	25,039

(a) The figures for 1932 onwards refer to pupils who left when over 14 years of age. In each case the figures exclude pupils transferred to other secondary schools, pupils who entered training colleges, and pupils transferred to public elementary schools.

*Statistical Abstract for the United Kingdom for each of the fifteen years 1924-1938 Cmd. 6232 1940 Table 44 (E)*

## Number of pupils

'Total number of full-time pupils attending grant-aided schools and colleges (including Universities) (a) in England and Wales:

*Note:* The particulars relate to a date within the year or to 12 months ending in that year.

(a) The table relates to education within the purview of the Board of Education, the University Grants Committee, and the Ministry of Agriculture and Fisheries.

(b) Pupils in institutions of specialized education for industry and commerce excluded for years prior to 1930.'

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	1924	1931	1938
1. Total population aged 5 and under 14 - - - - - <i>thousands</i>	5,883	5,918	5,371
2. Number of children aged 5 and under 14 in full time attendance at grant-aided schools and colleges (b) - - - - - <i>thousands</i>	5,434	5,456	5,004
3. As a percentage of 1 - - - - -	92.4	92.2	93.2
4. Total population aged 14 and under 17 - - - - - <i>thousands</i>	2,202	1,956	2,039
5. Number of children aged 14 and under 17 in full-time attendance at grant-aided schools and colleges (b) - - - - - <i>thousands</i>	330	364	399
6. As a percentage of 4 - - - - -	15.0	18.6	19.6
7. Number of persons aged 17 and over in full-time attendance at grant-aided schools and colleges (b) - - - - - <i>thousands</i>	71	93	96

*Statistical Abstract for the United Kingdom for each of the fifteen years 1924-1938 Cmd. 6232 1940 Table 40 (E)*

### Planning requirements of schools

In urban areas schools should be within convenient walking distance for the children. A maximum of  $\frac{3}{4}$  mile for children under 11 and  $1\frac{1}{4}$  miles for older children may be taken as normal standards. In rural areas distances will be greater, and it will be necessary to adopt some means of mechanical transport and the distances to be covered will be determined by local circumstances.

Children should have to cross a minimum number of main roads in travelling to and from their homes. Schools should never discharge children onto a main road, and should be sited on quiet roads in the centres of the residential areas served.

The two main divisions of State-aided schools in England and Wales are, at present, elementary and secondary.

Elementary schools are of two types, Primary and Post-Primary or Senior. Primary Schools may cater for one or more of the following groups: Nursery, for children under 5; Infants, for children aged

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5-7; Juniors, for children aged 7-11. Nursery and Infant Schools are mixed and Junior Schools may be either mixed or single sex. The most usual type of Primary School is probably one having an annual intake of two forms of 40 pupils each. The Infants School (or Department) would thus have a two years' course and a capacity of 160 pupils, and the Junior Department a four years' course and a capacity of 360 pupils. Provision of Nursery Schools depends on local demand since attendance at these schools is voluntary. Demand is generally greatest where an appreciable proportion of mothers go out to work.

Post-Primary (Senior) Schools at present provide a three year's course from 11+ to 14. Annual intakes of two, or three, forms of 40 pupils are common, giving a capacity of 320 or 480 pupils. 480 pupils is probably the greatest number over which a head teacher can exercise the desirable personal attention.

Secondary Schools, which are also Post-Primary, are generally for pupils aged 11 to 16 although almost invariably additional courses are provided for the older pupils.

For various reasons, including a longer school course, Secondary Schools provide a higher standard of education than do Senior Schools. The normal length of the course is five years but a proportion of the pupils remain longer, so that the size of the school averages about six times the annual entry. The annual entry may be one, two, three or four forms of 30 pupils each but a three-form entry is probably the most common.

The area of land required for a school site is made up of (a) land for the school buildings and playgrounds and (b) land for playing fields. In the past it has been usual to build compact and solidly constructed schools which it was almost impossible to adapt to meet changed conditions. A more open and flexible layout makes such changes possible. A Senior School of this latter type having a capacity of 300-600 pupils would require a site of 3 to 5 acres for buildings and playgrounds.

Playing fields should adjoin the schools and belong exclusively thereto. Where this is not possible, they should be as near as possible. An area of 3 acres of playing fields per 100 pupils should be provided for all Post-Primary Schools other than Young People's Colleges, pupils attending which will usually take part in club or other organised games for which public facilities are provided.

Primary Schools are not always provided with playing fields at present, although it is generally agreed that a field should be provided. Ample playing space is needed and Primary Schools should have an area of 2-4 acres within the school site.

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The total annual entry of children for whom schools must be provided can be ascertained with reasonable accuracy in relation to any given population. The proportionate allocation of these children between various types of school can be determined as follows: The annual report of the Board of Education for 1938 shows that at that time the annual entry to all Post-Primary Schools was equivalent to about 15.5 children per 1,000 of the population of England and Wales, and that these were distributed between the different schools in the following proportions:

	<i>Per 1,000 population</i>	<i>Percentage of total</i>
Senior Elementary Schools -	12.4	80
Grant-aided Secondary Schools -	2.1	13
Other Schools - - - -	1.0	7
	15.5	100

Thus 93 per cent. of all children attending Post-Primary Schools must be provided for in grant-aided schools. It is felt that this proportion will not vary very considerably in the future. As regards Primary Schools, Junior and Infants schools or departments will usually be required to provide for the whole of the annual entry of children from the area which they serve.

Under average conditions of birth-rate (15.1 per 1,000) and infant mortality ( $5\frac{1}{2}$  per cent.) the following populations will be needed to enable a mixed school of the under-mentioned types with a single form entry of 30 pupils to be maintained:

<i>Type of school</i>	<i>Population served</i>
Infants and Junior, mixed sex - -	2,100
Post-Primary (Normal), mixed sex -	2,600
Post-Primary (with advanced course), mixed sex - - - - -	15,800

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A single sex school will require double the population needed for a mixed school, and a school with a two, three or four form entry will need a proportionately larger population. The above figures should therefore be looked on as the minimum necessary to enable the smallest school of each type to be maintained under the conditions mentioned.

The difficulty which arises from uncertainty as to the allocation of children between different types of Post-Primary school can be overcome by grouping into a contiguous unit the sites of the Post-Primary schools serving any given district. Re-allocation of land for buildings and playing fields can then be made within the group as demand varies between school types. The Primary Schools serving the immediate vicinity might also be included within the grouped site. Such a grouping would have additional advantages of economy and administrative convenience.

JAMES, R. H. and READ, C. W. W. *School sites and planning schemes. Town Planning Institute Journal Vol. xxx No. 2 1944 pp. 60-66 (S)*

**Site areas needed for schools**

Type of school	Forms of entry	Annual entry	Capacity of school	Area of site required, in acres		
				Buildings and play-ground	Playing-fields	Total site
Normal Post-Primary School. Ages 11 plus to 16 plus (5 years' course)	1	30	150	3	4.5	7.4
	2	60	300	4	9	13
	3	90	450	4.5	13.5	18
	4	120	600	5	18	23
Post-Primary School, (with advanced course). Ages 11 plus to 18 plus (average course, 6 years)	1	30	180	3	5.5	8.5
	2	60	360	4.5	11	15.5
	3	90	540	5	16	21
	4	120	720	5.5	22	27.5
Junior School. Ages 7 plus to 11 plus (4 years' course)	1	30	120	2	2	4
	2	60	240	2.5	2.5	5
	3	90	360	3	3	6
	4	120	480	4	4	8
Infants' School. Ages 5 plus to 7 plus (2 years' course)	1	30	60	2	—	2
	2	60	120	2	—	2
	3	90	180	2.5	—	2.5
	4	120	240	3	—	3

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'The capacity of a school is determined by the product of the number of forms of entry, pupils per form and average length of the school course. The resulting future standard sizes of schools is shown in the preceding table, based upon 30 pupils per form; together with the area of site required for each school.

'Young People's Colleges. Ages 16 to 18. Course of 2 years.

Forms of entry	Number per form	Annual entry with 5 day week and working:		Number of places in school, 2 years' course	Area of site in acres
		1 day per week	2 days per wk.		
1	30	$1 \times 30 \times 5 = 150$	75*	$1 \times 30 \times 2 = 60$	2
2	30	$2 \times 30 \times 5 = 300$	150	$2 \times 30 \times 2 = 120$	3
3	30	$3 \times 30 \times 5 = 450$	225*	$3 \times 30 \times 2 = 180$	3.5
4	30	$4 \times 30 \times 5 = 600$	300	$4 \times 30 \times 2 = 240$	4

\* These colleges will necessitate a rotation of days of attendance for a proportion of the pupils due to there being an odd number of days in the working week.

'The total area of land required for school buildings and playing fields, upon the basis of the above figures and under average conditions of birth and infant mortality rates, is equivalent to about 3 acres to every 1,000 of the population.'

JAMES, R. H. and READ, C. W. W. *School sites and planning schemes. Town Planning Institute Journal Vol. xxx No. 2 1944 pp. 63-64 (E)*

## SEVERN BARRAGE

### Engineers' recommendations

We summarise our principal conclusions as follows:

1. The best site for the Barrage is at the English Stones.
2. Single tide working, generating power on the falling tide only, is the most suitable under the conditions prevailing.
3. The maximum power available at spring tides will be in round figures 800,000 kilowatts, and the average annual output of energy at the Barrage substations will be 2,190 million, and at the points of reception will be 2,107 million kilowatt-hours during the first 15 years and 2,207 million thereafter.
4. The road and rail crossings should be treated independently of the power scheme, i.e. should be provided by a separate structure.



# SEVERN BARRAGE

5. A new dock area above the Barrage is a matter of trade and policy but the value of the basin created by the Barrage is discounted by the fact that it will have a tidal variation of level of 20 feet and thus will be a tidal basin and not a wet dock. Provision has been made to allow the existing upstream ports to develop with their normal extension, and we consider that this will be suitably met by the two 70-feet wide locks proposed.

6. In view of the rapid expansion of the supply and demand of electricity in the country, intermittent and variable energy from the Severn Barrage can be used in conjunction with existing and new coal-fired power stations connected to the Grid system, and the need for storage of energy by pumping water to reservoirs no longer arises.

7. The estimated total capital costs of the scheme under the conditions stated in Paragraph 26 [of *op. cit.*] with and without transmission, at pre-war and estimated values used in the Report are :

	1936 <i>Pre-war basis</i>	1944 <i>Report basis</i>
Barrage scheme - - - -	£24,454,000	£40,215,700
Barrage with transmission - -	£28,640,000	£47,006,700
The estimated cost of energy in pence per kilowatt-hour is :	<i>Pence per kilowatt hour</i>	
(i) for first 15 years from 1955 with restriction of output :		
at Barrage substations	0.134	0.209
at reception points -	0.175	0.275
(ii) without restrictions in output :		
at Barrage substations	0.128	0.199
at reception points -	0.167	0.262

8. The estimated average saving of coal for the first 15 years of operation is 985,000 tons per annum.

9. The works could, in the view of the signatories of the Report, be completed in eight years and the average number of men employed yearly at the site would be 4,570. In addition, about 6,285 men would be indirectly employed yearly in the manufacture of materials, machinery and in transport. Including transmission and substations the average yearly total would be 11,727.

10. The Barrage scheme is practicable from an engineering point of view and it can be economically justified under the conditions

stated. Before it is decided to proceed with the construction of a scheme of this size, many considerations other than technical arise, which are outside our terms of reference.

*Ministry of Fuel and Power. Report on the Severn Barrage Scheme. 1945 pp. 16-17 (S)*

## SHOPS

### Results of a trial census of distribution

The Census of Production measures factory production with considerable accuracy and well over half this production is directly consumed by the public and is distributed to them through retail shops. Wholesale and retail distribution charges are responsible for from 30 to 35 per cent of the retail selling price of a wide range of products, and the distributive trades are the largest individual occupational group and included at the middle of 1935 nearly one-sixth of all insured persons. There is evidence that the distributive machine is not gaining in efficiency at the same rate as the industrial: between 1923 and 1935 insured persons in the distributive trades rose from one-ninth to one-sixth of the insured population. Yet there is little statistical measurement of this very important field. The obscurity which surrounds this subject is well illustrated by the fact that recent estimates of the total number of shops range from 500,000 to 1,100,000. This obscurity could be remedied by a Census of Distribution to parallel the Census of Production. It is clear from the study of American business publications that the American Distribution Censuses of 1929 and 1933 have been very valuable to the business man.

The Committee decided to undertake on a limited scale a Distribution Census in a few English towns. It was decided to cover six towns, and that they should be as far as possible separate entities, well scattered geographically and of approximately equal population. The group finally chosen, all with a population between 30,000 and 31,000 at the 1934 mid-year estimate, were Jarrow, Chorley, Kidderminster, Stafford, Wycombe (includes High Wycombe and West Wycombe) and Weymouth.

The following information was obtained about each shop: (1) trade description of shop; (2) commodities sold; (3) economic type of shop; (4) rateable value. The enquiry was confined to retail trades only. For obvious reasons, information on important matters like turnover, employment figures, etc., which would be obtained in an official census, could not be sought.

Some of the results of the Census are given in the following tables:

# SHOPS

## POPULATION OF TOWNS AND TOTAL NUMBER OF RETAIL PREMISES SURVEYED

	<i>Chor- ley</i>	<i>Kidder- minster</i>	<i>Wey- mouth</i>	<i>Wy- combe</i>	<i>Staf- ford</i>	<i>Jar- row</i>	<i>All six towns</i>	<i>Aver- age</i>
Estimated popula- tion (mid-1934) -	30,252	30,870	30,280	30,932	30,639	30,850	183,823	30,637
Percentage increase (+) or decrease (-) during decade 1921-1931 -	+0.7	+6.6	-10.5	+19.2	+3.0	-10.0	+0.7	+4.7*
Number of retail premises:								
<i>Occupied</i> -	919	853	787	727	666	491	4,443	741
<i>Unoccupied</i> -	30	18	14	53	17	165	297	49
Total -	949	871	801	780	683	656	4,740	790
Population per (oc- cupied) selling- point -	32.9	36.2	38.5	42.5	46.0	62.8	41.4	41.4

\* All Great Britain

Although the populations vary by little more than 2 per cent., Chorley has 87 per cent. more occupied shops than Jarrow. Jarrow, which has the fewest shops, is certainly the most depressed town, but Chorley is the next most depressed and has easily the largest number of occupied shops with only a normal proportion unoccupied. Kidderminster and Stafford are towns of similar character yet Kidderminster has nearly 200 more shops than Stafford. Weymouth and Wycombe, despite the seasonal trade in the one and the rapid growth of the other, are the nearest to the average in the group.

## SUMMARY OF TOTAL RETAIL OUTLETS IN THE SIX TOWNS CLASSIFIED BY TRADE TYPE

<i>Trade</i>	<i>Single trade type only</i>	<i>Single and compound trade types, excluding subsidiaries</i>	<i>Total number of outlets including subsidiaries</i>
1. Bakers - - -	88	144	152
2. Confectioners - - -	62	238	279
3. Dairies - - -	29	31	31
4. Butchers - - -	230	237	238

## SHOPS

<i>Trade</i>	<i>Single trade type only</i>	<i>Single and compound trade types, excluding subsidiaries</i>	<i>Total number of outlets including subsidiaries</i>
5. Pork Butchers - -	11	12	15
6. Tripe Dealers - -	4	4	6
7. Cooked meats, etc. -	9	10	11
8. Fishmongers and poul- terers - - -	36	49	55
9. Grocers - - -	198	230	241
10. Provision dealers - -	23	25	39
11. Greengrocers - -	134	163	176
12. Florists - - -	15	15	25
13. Wine and spirits - -	21	22	25
14. Beer dealers - - -	9	17	22
15. Tobacconists - - -	37	48	257
16. Corn and seed merchants	11	13	14
17. Tailors - - -	42	50	50
18. Men's outfitters - -	58	69	77
19. Drapers - - -	91	105	114
20. Ladies' outfitters - -	42	44	57
21. Children's outfitters -	6	6	10
22. Men's speciality dealers	13	16	17
23. Ladies' speciality dealers	103	104	109
24. Wool and art needlework	17	19	19
25. Boot and shoe dealers -	78	80	88
26. Furniture dealers - -	54	62	64
27. Building materials - -	20	27	30
28. Moulding and wood- work - - -	3	3	3
29. Oil and colourmen, etc.	5	5	6
30. Decorator's supplies (in- cluding wallpaper) -	24	24	32
31. China and glass - -	14	19	21
32. Ironmongers and hard- ware - - -	55	64	70
33. Electrical appliances and supplies - - -	31	42	53
34. Gold and silversmiths -	1	1	1

## SHOPS

<i>Trade</i>	<i>Single trade type only</i>	<i>Single and compound trade types, excluding subsidiaries</i>	<i>Total number of outlets including subsidiaries</i>
35. Jewellers - - -	12	19	25
36. Dealers in watches and clocks - - -	13	16	23
37. Dealers in leather goods	15	16	17
38. Chemists and drug stores	54	64	65
39. Opticians - - -	22	23	28
40. Booksellers - - -	6	7	12
41. Stationers - - -	11	19	28
42. Newsagents - - -	36	100	116
43. Circulating libraries -	12	12	18
44. Dealers in photographic supplies - - -	1	1	9
45. Art dealers and picture framers - - -	7	7	7
46. Art and craft dealers -	3	3	3
47. Dealers in musical in- struments and music -	8	10	10
48. Wireless dealers - -	28	38	56
49. Toys and sporting goods	8	11	16
50. Prams and baby carriages	1	3	5
51. Cycle dealers - - -	30	41	48
52. Motor vehicle dealers -	3	7	10
53. Coal merchants (shops only) - - -	12	12	12
54. Marine store dealers -	2	2	2
55. Nurserymen, seedsmen, etc. - - -	8	8	10
56. Monumental masons -	13	13	14
57. Dealers in live animals -	2	2	3
58. Speciality retailers (not otherwise specified) -	59	59	63
59. Department stores -	7	7	7
60. Bazaars - - -	12	12	13
61. General dealers (village general) - - -	298	317	341

## SHOPS

<i>Trade</i>	<i>Single trade type only</i>	<i>Single and compound trade types, excluding subsidiaries</i>	<i>Total number of outlets including subsidiaries</i>
62. Generaldealers(drapery)	29	33	39
63. Generaldealers(grocery)	317	333	363
64. General dealers (fancy goods) - - -	16	25	36
65. Dealers in second-hand books - - -	1	2	2
66. Dealers in second-hand furniture - - -	14	14	21
67. Dealers in second-hand clothes - - -	16	16	17
68. General second-hand dealers - - -	6	6	8
69. Pawnbrokers - -	5	12	13
70. Cafes and tea-shops -	53	65	95
71. Fish and chip shops -	120	123	136
72. Other unlicensed caterers	13	16	20
73. Restaurants and licensed caterers - - -	4	6	6
74. Public houses - - -	424	427	427
75. Hotels—non-residential and residential - -	42	42	44
76. Boot repairers - -	135	142	147
77. Clothes repairers (dye- ing, cleaning, etc.) -	36	37	38
78. Gents' hairdressers -	53	61	67
79. Ladies' hairdressers and beauty parlours -	60	63	69
80. General hairdressers -	57	59	60
81. Photographers - -	15	18	19
82. Undertakers - - -	3	3	4
83. Cycle repairers - -	4	4	10
84. Garages - - -	81	89	94
85. Petrol stations - -	19	20	22
	3,780	4,443	

## SHOPS

The first total in the above table comprises all shops which are recorded as pursuing only one trade. The total of the second column includes all 'compound' shops (i.e. those pursuing more than one trade) whose main business comes under the stated heading. The last total includes also the 'compound' shops whose main business has already been counted elsewhere but whose subsidiary business comes under the stated head. This third total includes a considerable amount of double counting, but is important as giving the nearest indication that can be obtained from a trade record alone of the potential outlets for any particular commodity.

Although Chorley has the most shops and Jarrow the fewest, this does not apply to every trade. To take a few random cases from the more important types, there are most grocers, greengrocers, and chemists at Weymouth; most dairies, garages and hardware merchants in Wycombe; while, conversely, there are fewest bakers, confectioners and chemists at Stafford, and fewest newsagents, fish and chip stores and greengrocers in Wycombe.

ECONOMIC CLASSIFICATION OF RETAIL OUTLETS

	<i>Chor- ley</i>	<i>Kidder- minster</i>	<i>Wey- mouth</i>	<i>Wy- combe</i>	<i>Staf- ford</i>	<i>Jar- row</i>	<i>All six towns</i>
Independent shops - -	806	702	632	594	536	416	3,686
Multiple shops - - -	20	39	27	58	33	15	192
Co-operative branches -	15	14	10	5	15	19	78
Public houses - - -	70	91	87	63	78	38	427
Unclassified (includes resid- ential hotels) - - -	8	7	31	7	4	3	60
Total - - - -	919	853	787	727	666	491	4,443

The information in the above table is based on the personal observation of investigators and does not therefore disclose cases in which an apparently independent shop is in reality controlled by a multiple owner. The term 'Multiple shop' was held to cover all cases (with the exception of the shop just referred to) where more than five branches are under a single control. More important local multiples as well as national chains are thus included. A common feature of co-operative trading is for several branches to be housed under one roof. Where such branches are separately managed they have been separately listed but where under a single manager they have been called Department Stores (see Table on p. 302). All public houses have been separately classified, as it is frequently difficult to distinguish between tied houses and those independently owned.

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## CLASSIFICATION OF RETAIL PREMISES

	<i>Chorley</i>	<i>Kidderminster</i>	<i>Weymouth</i>	<i>Wycombe</i>	<i>Stafford</i>	<i>Jarrow</i>	<i>All six towns</i>
Lock-up premises - -	230	257	281	234	238	137	1,377
Shops with dwelling-house attached - -	477	421	367	399	300	301	2,265
Dwelling house only (i.e. 'Parlour-shops') - -	139	74	30	27	43	14	327
Unclassified (including hotels and public houses) - -	73	101	109	67	85	39	474
Total - - - -	919	853	787	727	666	491	4,443

Where the premises include a dwelling-house, a distinction has been made in the above Table between those structurally intended for use as shops ('Shops with dwelling-house attached') and those not so intended but where a small shop has been opened, usually in the front room ('Parlour-shops'). Chorley and Kidderminster have many more Parlour-shops than other towns, indicating that shops in these towns tend to be small and of a poor type, a view corroborated by their low average rateable values shown in the Table below.

## RATING ASSESSMENT OF SHOP PREMISES

	<i>Chorley</i>	<i>Kidderminster</i>	<i>Weymouth</i>	<i>Wycombe</i>	<i>Stafford</i>	<i>Jarrow</i>	<i>All six towns</i>
Number of shops in each assessment group:							
Under £20 -	467	367	123	84	186	242	1,469
£20-£50 -	337	298	360	285	270	203	1,753
£50-£100 -	92	109	155	175	109	29	669
Over £100 -	23	45	112	130	70	17	397
Shops for which rates are not obtainable - -	—	34	37	53	31	—	155
Total - -	919	853	787	727	666	491	4,443
Total rateable value	£26,239	£29,753	£48,867	£55,239	£32,889	£14,357	£207,344
Average rateable value per shop -	£29	£35	£62	£76	£49	£29	£47

In towns other than Jarrow and Chorley, there were a certain number of premises for which rateable values were unobtainable. In computing the figures shown for total rateable value, allowance has been made for these premises by assigning to them the average rateable value as calculated for the remaining shops.



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No attempt has been made to correct the crude assessments so as to allow for the annual value of the dwelling-houses in cases where these are attached to shops.

The standards on which rating assessments are made vary from town to town, so that a rateable value of £50 at Jarrow does not necessarily correspond to one of the same amount in Wycombe. The level of ground rents is an important factor in determining that of assessments, so that the average assessment figure in Wycombe is likely to be considerably above that of a similar shop in Jarrow or Chorley. Nevertheless differences in average rateable values such as those between Chorley and Wycombe certainly cannot be attributed solely to differences in the basis of assessment.

Rating assessments have only been included in this sample census because they are the best available guide, albeit a very rough and unsatisfactory one, to the size and importance of the various premises.

*International Chamber of Commerce. British National Committee. Trial census of distribution in six towns. 1937 (S)*

**Distribution of shops in relation to population, Gt. Britain**

<i>Year</i>	<i>Place</i>	<i>Persons per shop</i>
1931	Middlesborough	85.5
"	Bolton	37.3
1929	Liverpool	40.0
"	Manchester	44.0
"	Birmingham	52.0
"	Glasgow	60.0
1937	Chorley	32.6
"	Jarrow	61.1
"	Weymouth	42.0
1938	Slough	72.0

It is estimated that there were at the outbreak of war about 750,000 shops in Great Britain, about one shop to every 60 persons or 16 families. Nearly 2 million people were engaged in retail trade.

Since then there has been a big drop, particularly in small shops. Between September 1939 and March 1942 the number of very small non-food retailers with a turnover of under £1,000 decreased by 19 per cent. and small non-food retailers, with a turnover between £1,000 and £2,500, decreased by 11 per cent. A sample test in Glas-

## SHOPS

gow suggests that about one quarter of the non-food shops there had closed between the outbreak of war and July, 1941.

The proportion of shops to persons in particular localities varies considerably. Examples are shown in the preceding Table.

Figures from the 1931 Census returns indicate the number of shops. The number of assistants in addition to the shopkeeper or manager show that most of the shops were small. The returns give only one occupation for each person engaged in retail trade, so that the number of outlets for a particular commodity—e.g. tobacco or sweets—is often much greater than the returns suggest. A recent survey has shown that of all the retail outlets for groceries, 30 per cent. were non-grocers. The Census also excludes shops giving only part-time occupation, and small shops and kiosks run by employees not described as managers.

Retail shops in England and Wales, 1931 :

<i>Trade</i>	<i>Number of shops</i>	<i>Per cent. of total</i>	<i>Average number of assistants</i>	<i>Population per shop</i>
Grocery and provisions	92,700	16.1	1.6	430
General stores - - -	78,500	13.6	0.3	510
Textiles and clothing -	74,000	12.9	2.4	540
Meat - - - -	49,400	8.6	1.8	820
Greengrocery - - -	40,900	7.2	0.8	1,000
Sweets - - - -	31,500	5.5	0.8	1,270
Stationery, etc. - - -	28,900	5.0	1.6	1,390
Dairy produce - - -	26,200	4.6	0.4	1,540
Fish and poultry - - -	17,400	3.0	1.0	2,300
Tobacco - - - -	14,300	2.5	0.8	2,800
Boots and shoes - - -	12,900	2.2	2.0	3,080
Furniture - - - -	12,800	2.2	1.4	3,130
Ironmongery - - - -	12,000	2.1	1.6	3,300
Drugs and druggist's sundries - - - -	10,100	1.7	2.0	4,000
Others - - - -	73,700	12.8		540
Total* - - -	575,300	100.0		70

\* Bakeries are not accounted for.

The number of shops in different trades also varies much between towns. A comparison of shops in Glasgow and Leeds in 1939 shows this:

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<i>Trade</i>	<i>Number of persons per shop</i>	
	<i>Glasgow</i>	<i>Leeds</i>
All trades - - - - -	60	45
Grocers and general shops - -	435	260
Clothing (including laundries, cleaners; shoes and shoe re- pairs - - - - -	347	230
Hardware (and furniture and de- corating) - - - - -	586	412
Butchers - - - - -	1,430	758
Greengrocers - - - - -	1,438	770
Bakers - - - - -	1,810	1,510
Confectionery - - - - -	930	980
Dairies - - - - -	1,009	1,660
Tobacconists - - - - -	3,270	4,160
Fishmongers - - - - -	3,950	5,000

Types of shop also vary between towns. There are about 1,000 department stores in Britain, of which the larger, about 300 in all, are not usually found in towns of less than 100,000 population. Of variety chain stores, Marks and Spencers have branches in towns of 30,000 and over and Woolworth's may be found in towns of 5,000. Multiple stores may be found in still smaller towns. Co-operative Societies' branches include household stores for at least 500 members or 1,800 persons and pantry (grocery) shops for 750 persons. Independent shops are on the average smaller than the other types and before the war formed about 90 per cent. of the total, but had only about half the total turnover.

Shops may attract custom from a wide area. The Census of American Business, 1933, showed that 47.6 per cent of the total population lived in towns of over 10,000 inhabitants, but that 54 per cent. of all shops were in these towns and accounted for 70 per cent. of all sales.

In each town there are usually one or more shopping centres drawing customers from many streets. The 3rd Report of the Retail Trade Committee said that, in seven representative towns, less than 30 per cent. of the non-food shops were congregated in the main shopping area but that nearly 70 per cent. of the estimated total turnover was taken by shops in that area.

Some of the factors which influence the location of shops, from the viewpoint of consumer need, are these:

Local shops have many advantages. Visits to them take little time

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and cause no expense for fares. Old or infirm people and mothers of small children can visit local shops with little difficulty when expeditions to the shopping centre a mile or more away would be impossible. Children can run errands to local shops and frequent purchase of perishables is simple. From the viewpoint of the consumer, the closer the shop the better.

It is, however, obviously uneconomic to have a specialized shop or department store round every corner. The location of shops is determined by turnover at different places and by the willingness of the customer to sacrifice the greatest accessibility for certain other advantages. The balance of advantage varies with each class of goods.

Local shops are required for casual needs and perishable foods, although the development of canning and freezing is making it easier to store perishable goods both in shops and homes. Other goods do not need to be bought frequently and a wide range from which to choose is usually more important than the nearness of the shop. Clothes and furniture are examples. The large shopping centre provides this range of choice at competitive prices. The large centre can also support the specialized shop, milliners or music shop.

The development of transport and delivery services by shops in the inter-war period increased the pull of the large shopping centre. In addition, the development of branded goods, which do not need inspection before purchase, and the possibility of ordering by 'phone or postcard for free delivery, increased this pull for middle-class areas. A Post Office test enquiry in 1936 showed that one-third of all calls from residential subscribers were to retail shops. (The number of telephones in Great Britain was 5.9 per 1,000 persons in 1937 against 14.5 in U.S.A., and was lower than in Scandinavia and Australia, New Zealand and Canada). The lack of telephone can be offset by a weekly order given to a tradesman who calls regularly. A reorganisation of delivery systems, possibly by pooling, would probably enable it to be greatly extended among lower income groups.

A survey of the shopping needs and habits of representative residents on Council housing estates shows that for a majority of housewives nearness to shops is only a secondary consideration. Of the tenants who answered the inquiry, 60 per cent. were ready to go over  $\frac{1}{4}$  mile to their nearest shop and 18 per cent. were willing to go over half a mile. The general shop patronised was often not the nearest one. The personal service received from the shopkeeper or assistant greatly influenced the choice of shop. A group of shops, which can supply all needs for the day, seems to meet the shoppers' wants better than a scattering, particularly if it provides a choice of shop for main purchases. In four central areas in Birmingham, Liverpool and

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London, 54 per cent. of sample tenants usually gave a weekly order for groceries and household goods and 62 per cent. of those in outer estates did so. The average distance of the outlying estates included in the survey from the local town centre is nearly  $1\frac{1}{2}$  miles and in some cases over 3 miles, yet in all of them the majority of tenants usually went to town to shop at least once a week.

Markets, particularly large covered ones, were found to be universally popular. None of the housing estates surveyed are large enough to support a good market of their own, but a large majority of tenants went regularly to market if there was one within reach.

*P.E.P. (Political and Economic Planning). Retail distribution and town planning. Broadsheet No. 202 1943 (S)*

## Distribution of shops in relation to population, 22 American towns

*Table continued on page 311*

City	Number of stores	Store frontage in linear feet	Average frontage per store linear feet
Knoxville, Tenn. - - -	1,736	52,370	30.2
Vancouver, B.C. - - -	4,130	96,232	23.3
San Angelo, Tex. - - -	475	10,702	22.5
Fort Worth, Tex. - - -	4,056	110,830	27.3
Cape Girardeau, Mo. - - -	217	7,848	36.2
Sacramento, Cal. - - -	2,617	71,604	27.4
San Jose, Cal. - - -	2,064	55,593	26.9
Springfield, Mo. - - -	1,403	41,848	29.8
Cedar Rapids, Ia. - - -	1,260	36,627	28.3
Tulsa, Okla. - - -	3,220	91,849	28.5
Louisville, Ky. - - -	6,300	145,800	23.1
Peoria, Ill. - - -	2,092	51,706	24.7
Jefferson City, Mo. - - -	313	9,596	30.7
San Antonio, Tex. - - -	5,638	180,929	32.1
Troy, O. - - -	169	5,271	31.2
Binghamton, N.Y. - - -	1,621	45,160	27.9
Totals - - - -	37,311	1,012,965	—
Averages - - - -	—	—	28.1
Clayton, Mo. - - -	132	—	—
University City, Mo. - - -	251	—	—
Maple Wood, Mo. - - -	286	—	—
River Forest, Ill. - - -	59	—	—
Ferguson, Mo. - - -	63	—	—
Shrewsbury, Mo. - - -	6	—	—
Totals - - - -	797	—	—
Averages - - - -	—	—	—

# SHOPS

In recent years it has become clear that by no means all frontage on main thoroughfares can be used for commerce. The area needed for commercial use in any self-contained city is definitely limited. An examination of the figures obtained show little variation in the commercial acreage per 100 persons between the sixteen self-contained cities examined. The average is 0.179 acres per 100 persons. If all major thoroughfares were zoned for commerce at least ten times the area actually needed would be obtained.

The laws governing commercial development can also be expressed as a ratio of linear feet of store frontage to population. Studies in cities near Chicago a few years ago revealed an average store frontage of 50 linear feet per 100 persons with a variation from 22 to 90 feet.

Somewhat similar results have been obtained in present survey [see Table on pages 310 and 311].

Table continued from page 310

<i>Store frontage linear feet per 100 persons</i>	<i>Commercial area in acres</i>	<i>Stores per acre of Commercial area</i>	<i>Store frontage linear feet per acre of commercial area</i>	<i>Number of stores per 100 persons</i>
52.3	151.0	11.5	347	1.73
67.0	228.0	18.1	422	2.88
47.1	38.7	12.3	277	2.09
72.6	203.9	19.9	544	2.66
51.2	35.3	6.1	222	1.42
79.3	193.3	13.5	370	2.90
99.9	89.2	23.1	623	3.71
73.1	117.4	12.0	356	2.45
63.9	124.4	10.1	286	2.26
65.0	216.4	14.9	424	2.28
47.4	537.0	11.7	272	2.05
49.2	158.0	13.2	327	1.99
54.6	44.4	7.0	216	1.78
78.1	413.6	13.6	437	2.43
60.6	10.9	15.5	484	1.94
58.2	146.7	11.0	308	2.09
—	2,708.2	—	—	—
63.7	—	13.3	370	2.29
—	10.5	12.6	—	1.48
—	26.5	9.5	—	1.07
—	21.8	13.1	—	2.36
—	9.1	6.5	—	0.66
—	6.4	9.9	—	1.65
—	1.1	5.5	—	0.39
—	75.4	—	—	—
—	—	9.5	—	1.27

## SHOPS

The figures indicating acres of commercial development per 100 persons show little variation between the sixteen self-contained cities. The average is 0.179 acres per 100 persons, the maximum 0.253 and the minimum 0.125: nine of the sixteen cities have between 0.150 and 0.189 acres.

<i>No. of cities</i>	<i>Population Classification</i>	<i>Commercial area: Acres per 100 persons</i>	<i>Stores per 100 persons</i>	<i>Percentage of developed area oc- cupied by commerce</i>	<i>Store Frontage: Lin. feet per 100 persons</i>
4	5,000- 50,000	0.195	1.81	1.80	53.4
5	50,000-100,000	0.198	2.68	2.78	74.9
6	100,000-250,000	0.154	2.33	2.34	64.0
1	250,000-300,000	0.174	2.05	2.85	47.4

BARTHOLOMEW, HARLAND *Urban land uses. Harvard City Planning Studies iv, 1932 pp. 71-84; Tables 24, 27 (S)*

### Number of shops in relation to population

An investigation has been made of the shops, population and other relevant features of thirty-seven housing estates, both large and small. In total these estates have 1,419 shops, serving a population of 321,547 living in 77,492 dwellings built at an average density of 8.8 houses per acre. The shops are in general intended to serve only immediate day to day needs, and the estates are on the average  $2\frac{1}{2}$  miles from the centre of the nearest town, a journey requiring an average return fare of 4d. by bus. The nearest secondary shopping centre outside each estate is at an average distance from it of  $\frac{7}{8}$  of a mile.

Similar investigations have been made of six established towns with populations of from 40,350 to 482,000. Their total population of 913,110 is served by 1,314 shops in main streets and 15,300 shops in subsidiary streets. The average areas of housing estate shops and those in subsidiary streets in towns may be estimated at about 500 sq. ft. each, shops in main streets of towns being no doubt larger.

The broad conclusions reached by analysing the results of these investigations are set out in the following table:

## SHOPS

NUMBER OF SHOPS, CLASSIFIED BY MAIN TRADE CARRIED ON

Main trade	Small estate with 5,000 population	Housing estates generally	Large towns	
			In subsidiary streets	In main streets
	(Col. 1)	(Col. 2)	(Col. 3)	(Col. 4)
Grocery and provisions	3 to 4	12 to 18	100	6
Butcher - - -	2 to 3	8 to 12	70	3.5
Baker - - -	1 to 2	4 to 8	35	1.5
Greengrocer - - -	1 to 3	4 to 8	70	1.5
Fishmonger - - -	0 to 2	1 to 7	15	1
Fried fish - - -	0 to 1	0 to 4	*	*
Dairy - - -	—	1 to 2	25	—
Cafe - - -	—	0 to 3	15	3
Wines and spirits, etc. -	—	0 to 2	10	1.5
Total food, etc. -	9 to 13	40 to 55	340	18
Drapery, etc. - - -	1 to 2	4 to 10	70	15
Men's outfitting - - -	0 to 1	2 to 4	40	13
Footwear - - -	0 to 1	2 to 3	20	8
Total clothing, etc. -	2 to 3	10 to 15	130	36
Tobacco, newspapers, stationery, sweets -	2 to 4	10 to 15	120	10
Chemist - - -	1	4 to 6	20	3.5
Hardware - - -	3 to 4	3 to 5	15	2
Hairdressing - - -		2 to 5	75	1.5
Boot-repairing - - -		2 to 4	40	—
Cycles, radio, electrical		2 to 4	25	4
Dyeing and cleaning -		1 to 2	10	2.5
Furniture - - -		0 to 2	25	4
Others - - -		5 to 8	200†	18.5
Total miscellaneous -	6 to 8	35 to 45	530	46
Grand total - - -	18 to 22	100	1000	100

\* Figures not available. † Includes 150 described as 'General Dealers'.



## SHOPS

### *Notes on the preceding table*

It appears that 5,000 is the smallest local population which can support a second shopping centre large enough to provide competitive service in the principal trades—a condition necessary to ensure popularity. This minimum group would contain about 20 shops and Col. 1 suggests how these shops might be distributed between trades. Trades whose incidence is 0 to 1 or nil. are those for which an adequate turnover cannot be provided by a 5,000 population.

The outstanding reason for the differences between the four columns of figures in the table is that Cols. 1, 2 and 3 all represent secondary shopping centres, and hence shops serving day-to-day needs feature more prominently in them than in Col. 4. Thus, of the total number of shops, food shops form just over half in Col. 1, just under half in Col. 2 and less than one-fifth in Col. 4. By contrast, clothing shops rise from about one-eighth of the total in Cols. 1, 2 and 3, to well over one-third in Col. 4.

The Col. 4 figure for 'others', 18.5, includes a number of trades which, though rarely featured among secondary shops, are an important part of main shopping centres. Thus the figure quoted includes 4.5 for jewellers and pawnbrokers, 2 for opticians and 1 each for building and decorating suppliers, leather goods dealers, toys and sports goods, motors and accessories, and photographers.

The figures have been tabulated solely according to the main trade carried on and not according to the type of trader—-independent, multiple or co-operative.

The figures in the table are based upon the results of an enquiry carried out by O. W. Roskill.

*Retailers' Advisory Committee on Town Planning. The planning of shopping areas. Appendix A 1944 (S)*

### Number and distribution of clothing and footwear shops

	Number	Percentage
Multiple shops - - - - -	8,250	10
Co-operative Stores - - - - -	2,460	3
Independent:		
(a) Wholly or mainly clothing -	70,440	81
(b) Other - - - - -	5,000	6
	86,150	100

# SHOPS

Number of shops of various types in the United Kingdom which at mid-1942 were handling goods controlled by the Consumer Rationing Order (clothing, footwear, hand-knitting yarn and dress materials) [see preceding Table].

*Note:* 'Multiples' were defined for the purpose of this table as firms with more than five branches, including the variety chains but excluding co-operatives. In the case of co-operatives, the number of separate shops given here represents the number of addresses, counting each address once only, although it may contain different departments. The total number of separate co-operative shops and departments selling rationed goods of the kind described above was 4,000 before the war. It is thought that this number has not changed much since then.

Estimated number of shops which at mid-1942 were selling the undermentioned goods analysed according to general description of shop:

<i>General description</i>	<i>Numbers</i>
Drapery - - - - -	35,800 ± 1,800
Outfitting (men's and/or women's) - -	15,900 ± 1,400
Footwear - - - - -	11,700 ± 1,200
Tailoring (men's and/or women's) - -	5,500 ± 900
Wool - - - - -	2,500 ± 600
Costumiers and Gown Shops - - -	1,900 ± 500
Variety Chain Stores - - - -	1,500 ± 500
Department Stores - - - - -	300 ± 200
Co-operative Stores - - - - -	2,300 ± 600
Other: wholly or mainly clothing - -	3,600 ± 700
Other: not wholly or mainly clothing -	5,200 ± 800
	86,200

*Note:* The figures in this table were derived from a sample analysis of 1,320 shops randomly selected by picking forms at regular intervals from the boxes containing the full 86,150 forms. The margins of error given represent 87 chances in a 100 that the true figures lie within the limits stated; the figures for footwear and co-operative stores compare very well with the known actual figures (11,950 footwear and 2,460 co-operative shops).

Buying population, mid-1942, served per shop, handling clothing,

## SHOPS

footwear, hand-knitting yarn and dress materials, by Civil Defence Regions :

Civil Defence Regions	Large towns			Remainder			Totals		
	No. of shops	Popu- lation '000	Average popu- lation per shop	No. of shops	Popu- lation '000	Average popu- lation per shop	No. of shops	Popu- lation '000	Average popu- lation per shop
London -	6,745	3,401	505	1,636	1,066	647	8,381	4,467	534
Eastern -	1,166	604	518	5,332	2,941	552	6,498	4,545	546
South Eastern -	543	341	628	5,137	2,970	578	5,680	3,311	584
Southern -	1,330	686	516	2,564	1,641	640	3,894	2,327	597
South Western -	1,090	540	496	4,157	2,362	568	5,247	2,902	553
Midlands -	3,823	1,712	447	4,077	2,270	556	7,900	3,982	504
North Midlands -	2,191	814	372	4,389	2,344	535	6,580	3,158	479
North Western -	6,883	2,907	426	6,473	3,355	517	13,356	6,262	469
North Eastern -	3,814	1,738	456	3,380	1,924	570	7,194	3,662	509
Northern -	1,286	790	614	2,679	1,799	672	3,965	2,589	653
Scotland -	3,050	1,860	610	6,370	2,979	467	9,420	4,839	513
Wales -	1,169	586	501	4,156	1,967	473	5,325	2,553	480
Northern Ireland -	942	427	453	1,763	864	493	2,705	1,291	477
Total -	34,032	16,406	483	52,113	28,482	547	86,145	44,888	521

*Notes:* (i) The buying population figures refer to 3rd April, 1942, and are estimates made by the Ministry of Food based on the number of persons registered for sugar under the Ministry's rationing schemes, including the number of Services personnel billeted privately for more than four weeks at a time, plus an estimate of the number of persons resident in institutions and establishments who do not register with retailers.

(ii) London, as referred to in the table, means the Administrative Counties of London and Middlesex.

(iii) It appears likely that the sugar registration figures do not fully measure the movement into large towns for the purchase of clothing and footwear. This is clearly so in the case of London, where the sugar registration figures give the 'buying' population as only 505 per shop against a national average of 521. London attracts people from all surrounding counties and also serves many customers through the post. If all these could be included the number of people served by each shop would be substantially raised, probably to well above the national average.

*General note to all three tables:* It is estimated that 90 per cent. of all shops in the United Kingdom wholly or mainly retailing the stated goods are covered by the tables, those omitted being presumably all small; shops selling hardware only are excluded.

*Board of Trade Journal. Retail outlets for rationed clothing, footwear and textiles. Vol. 150 No. 2478 3rd June 1944 (S)*

## SHOPS

### The planning of shopping areas

The public does most of its shopping personally, and despite facilities for ordering goods by telephone will continue to do so in the foreseeable future. It is a pleasurable activity and therefore the layout of shops should not only be convenient but provide a friendly and lively atmosphere.

Shops should be located in compact groups. Each town needs a shopping centre, and larger towns need both a main and one or more subsidiary centres. It is not possible to estimate how many shops of each type are needed in each centre—some figures and notes on this question are given in an Appendix (*see note on p. 314*). But there should be a fair allocation of sites between all types of trader—independent, multiple, co-operative, etc.

In towns of substantial size, the main shopping centre should be near but separate from the civic and the commercial and business centres, and amusement centre. The shopping centre should not be surrounded by other centres. Particular trades or types of trader should not be segregated within the shopping centre, although it is probable that shops aiming at the popular trade will tend to group together while those aiming at the exclusive trade will seek quieter positions.

Shopping streets with continuous shops on both sides have proved themselves the most popular. Such streets should accommodate both large and small shops. 80 feet is considered the maximum desirable width except in very exceptional circumstances. Footpaths should be between 8 and 18 feet in width and lighting should be centrally suspended. Gardens or grass strips along the centre of streets are not favoured as they destroy the street's character.

Shops should have service roadways at the rear. Site depth should be substantial—up to 150 feet. Where small shops do not wish to use the full depth it can be used for car parking or adjoining larger shops can use the space behind small shops by having sites of T or L shape. Passages would be necessary in this case to provide rear access to small shops.

It is considered that, providing the shopping area is intersected by roads of adequate width, there is no objection to at least the ground floors of shops covering the whole site area.

Shopping arcades are not favoured except as pedestrian short-cuts, nor are continuous glazed canopies over footways, nor is provision for street market trading.

It is suggested that control of the design and appearance should be limited to building line, overall height and a 'profile' on the building line fixing fascia and cornice heights and roof slope.

Height would vary but too great a height should be avoided: it is

## SHOPS

difficult to find a profitable use for the top floors of buildings in many shopping areas.

Up to the fascia line it is felt that the retailer should have control over his own shop frontage, and should be entitled to design it in whatever way he thinks best for his business. The appearance of shop buildings above the fascia line is, however, of concern to all retailers in the street, and a rigid control over advertisements above this line is recommended.

Means of access to shopping centres by public service vehicles and private car should be as convenient as possible. A terminal and interchange station for long distance buses should be provided near the centre, with covered waiting space and cloakrooms for parcels. Local buses should be routed along main shopping streets with suitably arranged stopping places. Car parks for private cars should be small and scattered in and near the shopping centre as well as larger and further away. Cars should also be allowed to pick up and set down outside shops and to wait a reasonable time—15 to 20 minutes.

Through traffic should not pass along shopping streets but local traffic, including public service vehicles on local routes, should be allowed. We are opposed to shops being located in precincts, and to devices to restrict opportunities for pedestrians to cross streets. Such restrictions are unpopular with the public and when crossing is thus made particularly difficult one side of the street tends to lose its popularity. It is suggested that diversion of through traffic would materially reduce road accidents and that the most satisfactory provision for crossing is by controlled pedestrian crossings at intervals of not more than 150 yards. Continuous guard-rails, subways and pedestrian bridges are not favoured.

A retailer who has been displaced by enemy action or by the execution of a replanning scheme should be given a real opportunity, if he so desires, to be reinstated in premises comparable, from the trading standpoint, with those which he formerly occupied. To facilitate such arrangements the compulsory registration of land titles is highly desirable and should be immediately enforced in all Boroughs and Urban Districts.

*Retailers' Advisory Committee on Town Planning. The planning of shopping areas. 1944 (S)*

## SLUM CLEARANCE

### Progress and outstanding requirements, 1939

'During the current decade the housing activities of local authorities have been chiefly directed to remedying the specific problems of

slums and overcrowding. . . . By the end of December 1938, 225,000 unfit houses had been demolished, 262,000 replacement houses had been completed and another 53,000 were under construction. In Scotland 70,000 unfit houses were demolished in the period 1930-38, and it is estimated that approximately another 66,000 houses still in occupation are unfit for habitation. . . .

'According to estimates supplied to the Commission by the Ministry of Health and the Department of Health for Scotland the number of additional houses still required to remedy slums and overcrowding is . . . 300,000 for England and Wales and 230,000 for Scotland.

'These figures do not include the additional houses that will be required by reason of the growth of the population and the demand for a higher standard of living.'

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 paras. 140, 142 (E)*

#### Obstacles to slum clearance presented by small, scattered sites

'Replanning an area depends largely upon its extent. It is possible to plan an area of 100 acres much better than replanning an area of one acre surrounded by streets and buildings to which streets in the area would have to be adapted. An ounce of practice is worth a ton of theory. Let us, therefore, see the extent of areas in an old town like Salford which could be brought within (a) and (b) and be acquired and replanned at site value.

'[(a) and (b) refer to "an area which appears . . . to be an area of the character described in Section 4 of the Act of 1880. Such an area is one within which either—

"(a) any houses, courts or alleys are unfit for human habitation; or

"(b) the narrowness, closeness, and bad arrangement, or the bad condition of the streets and houses or groups of houses within such area, or the want of light, air, ventilation, or proper conveniences, or any other sanitary defects, or one or more of such causes, are dangerous or injurious to the health of the inhabitants either of the buildings in the said area or of the neighbouring buildings."']

'They are all within the older part of the Borough, the original township of Salford incorporated in 1844. Two other townships were added in 1853 to form the present Borough. When the Housing Act of 1919 was passed and the fever of reconstruction was still raging, the Medical Officer of Health of the Borough made the Survey required by that Act and specified twenty-one separate areas as coming clearly within the definition of Unhealthy Areas.

# SLUM CLEARANCE

'Placing them in a descending scale of number of houses in each of the areas, we find :

<i>Area</i>	<i>Houses</i>	<i>Population</i>	<i>Population per house</i>	<i>Approx. Acreage</i>
1	315	1,527	4.84	6.26
2	292	1,411	4.83	5.50
3	237	1,396	5.8	5.82
4	231	1,060	4.58	3.80
5	213	1,018	4.77	2.66
6	155	1,106	7.1	4.56
7	139	704	5.0	2.66
8	92	430	4.66	1.72
9	82	322	3.92	.76
10	75	278	3.7	.65
11	75	296	3.9	1.39
12	64	447	7.0	1.75
13	59	316	5.35	1.08
14	59	289	4.9	.90
15	54	275	5.0	.90
16	52	149	2.86	.52
17	47	272	5.78	.81
18	44	282	6.4	1.12
19	41	155	3.78	.55
20	30	193	6.4	.59
21	19	108	5.68	.23
<b>Total Average</b>	2,375	12,034	5	44.23

'The Medical Officer of Health in describing these areas says of most of them that they are congested and that some houses are old and dilapidated and others in bad condition, and compares the death rate and infant mortality rate with those of the Borough. He considers that the groups of houses in such areas are dangerous to the health of the inhabitants of the buildings in the respective areas. But the table shows that the maximum approximate acreage of the biggest group of 315 houses was only 6.26 acres. The street planning of such a small area surrounded by existing streets is therefore almost

predetermined. All the areas were proposed to be cleared, and on most of the areas a lesser number of houses were to be erected. It could not fairly be said of any of the areas that they were dangerous or injurious to the health of the inhabitants of the neighbouring buildings so as to include such buildings in the scheme for dealing with the area. But a scheme for dealing with these areas might, however, include any neighbouring lands for making the scheme efficient, and if the confirming Authority agreed, these lands could be purchased, but . . . only at full value in accordance with Section 9 (1) of the Act of 1919. It is, however, a question of fact whether a scheme could be made efficient without including any neighbouring lands therein. If a scheme could be made effective without inclusion of neighbouring lands, they could not be included. This question of fact is, however, finally determined by the confirming Authority, and since the repeal of Section 8 (6) of the Act of 1890 by the Sixth Schedule of the Act of 1919, there appears to be no appeal from the decision of the confirming Authority.'

EVANS, L. C. *Acquiring and replanning congested areas.*  
*Town Planning Institute Journal Vol. ix No. 5 1922*  
 pp. 76-81 (E)

## SMOKE ABATEMENT

### The control of fuel-burning installations

Up to now legislation concerning smoke in this country has been concerned only with the abatement of a nuisance after it has been committed. For some time opinion has been growing that a more positive approach would be to try to prevent, so far as practicable, the emission of smoke by legislation concerned, not with smoke emission, but with the conditions that produce smoke.

The principle is analogous to the building regulations to which every builder must conform. What is needed is that plans and specifications of all proposed new fuel-burning plant should be approved by a competent authority before installation. This does not imply prescription as to what particular plant, fuel or method must be used. It is concerned only with the standards and suitability of the installation proposed, having regard to smokelessness and related factors such as general efficiency, capacity to meet requirements, etc.

This idea, new to this country, has been used widely and successfully on the Continent and in the U.S.A. for many years. In the latter country, smoke abatement is mainly dealt with by the local govern-



ments, and in most of the big cities the smoke abatement law requires prior approval and certification of all new fuel-burning installations and extensions of, or major alterations to, existing plant. Similar laws are in force in Germany, where the police are the regulating authority.

Despite the lack of general legislation in this country, there are several methods by which local authorities can exercise a substantial measure of control. And it is hoped they will be supported by the users and manufacturers of fuel burning plant and fuel producing industries; for smoke abatement is closely linked with fuel economy.

Under the Town and Country Planning Acts, 1932, 1943 and 1944, local planning authorities can attach conditions to their consent to proposed development on land specified in the Acts. When dealing with proposed developments which include fuel-burning plant, they can require the use of methods which are as smokeless as practicable. The local authority's requirements must not materially increase the capital cost of the plant unless the authority makes a contribution or grants compensation.

Secondly, several larger local authorities have for some years operated an advisory scheme which has proved most successful. When building plans are submitted which involve fuel-burning, they are passed to the Public Health Department or Smoke Inspector, who makes contact with the applicants and discusses the proposed installation. Co-operation is usually forthcoming, advice and assistance—if given at an early stage—are appreciated, and much can be done to ensure the use of suitable plant. This procedure might be used by all authorities, smaller authorities making some arrangement to share technical services. The defect of this procedure is of course that information cannot be obtained of alterations and additions to plant in existing premises.

Thirdly, where a local authority owns land and leases it for building purposes it can include a clause in its tenancy agreements that all fuel-burning plant shall be subject to the authority's approval. This control will now be more extensively applicable in view of local authorities in war-damaged towns becoming ground landlords of considerable areas, under the powers conferred by the Town and Country Planning Act, 1944.

Local authorities should also set an example within their areas by ensuring that all premises which they own or control are rendered smokeless.

*National Smoke Abatement Society. Smoke control. 1946 (S)*

# SOCIAL INSURANCE

Numbers covered by national insurance schemes, Gt. Britain

<i>At 31st December (a)</i>	<i>Figures in thousands</i>		
	<i>Unemployment</i>	<i>Health (b)</i>	<i>Widows, Orphans and Old Age</i>
1914	2,500	13,689	—
1921	11,081	15,165	—
1926	11,774	16,375	17,089
1931	12,500	17,353	18,513
1936	14,580	18,081	19,651
1938	15,395	19,706	20,678

(a) In July of each year for Unemployment.

(b) Excluding persons over 65 years of age.

BEVERIDGE, WILLIAM H. *Social insurance and allied services.*  
Cmd. 6404 1942 Appendix B Table xvii (E)

## STATISTICS

### Provisions of the Statistics of Trade Bill

The Bill is to enable Government Departments to obtain information needed to prepare appreciations of economic trends, and for other purposes.

In order to provide at intervals general surveys of the state of trade and business, the Board of Trade is empowered to take a census of production in 1948, and in every following year, and a census of distribution and other services in any year ordered by the Board; but the order must give a year's notice of the intention to take a census of distribution.

Any person carrying on an undertaking may be required to make returns, and the census may be partial or complete. The returns will normally refer to the calendar year next preceding the date of the census.

The Board of Trade shall appoint one or more committees to advise the Board concerning the census, and persons with experience of the various trades and businesses shall be included in such committees. The Bill includes provisions to prevent information con-

## STATISTICS

tained in a published census report being identified as relating to a particular person or undertaking.

The Bill includes power to obtain information concerning the estimated cost of buildings. Byelaws governing the deposit of plans, etc., showing proposed new buildings, are amended so as to enable the local authority to require particulars of estimated cost.

The Bill repeals the Census of Production Acts of 1906, 1917, and 1939.

Matters about which persons may be required to furnish estimates or returns under the Bill are as follows :

'The nature of the undertaking (including its association with other undertakings) and the date of its acquisition ; the persons employed or normally employed (including working proprietors) ; the nature of their employment, their remuneration and the hours worked ; the output, sales, deliveries and services provided ; the articles acquired or used, orders, stocks and work in progress ; the outgoings and costs (including work given out to contractors, depreciation, rent, rates and taxes, other than taxes on profits) and capital expenditure ; the receipts of and debts owing to the undertaking ; the power used or generated ; the fixed capital assets, the plant, including the acquisition and disposal of those assets and that plant, and the premises occupied.'

*Board of Trade. Statistics of Trade Bill, 1946 (S)*

# TOWN AND COUNTRY PLANNING

## Provisions of the Housing and Town Planning Act, 1909

This is the first British Act to be concerned with town planning. The Act is divided into two parts, the first of which deals with housing and the second with town planning.

The housing part of the Act deals with slum clearance by the local authority, enforcement by the local authorities of the removal by landlords of defects in dwelling-houses and provision by the local authority of working-class houses.

The town planning portion of the Act will no doubt in course of time be repealed and used as the basis for much more drastic legislation: town planning schemes are an entirely new thing in this country and the Act proceeds very cautiously in interfering with the independence of landlords and builders. The object of town planning schemes is to give very comprehensive powers to local authorities to prescribe in what way areas likely to be built upon shall be laid out. The Act also enables a local authority to deal with existing streets and prevent their being built upon except in prescribed ways.

Section 54 (2) of the Act provides that the Local Government Board may authorise a local authority to prepare a town planning scheme, and under certain circumstances may direct a local authority to prepare such a scheme.

CASSON, WILLIAM A. *Housing and town planning act, 1909*. 1912 pp. ix-xxi (S)

## Main provisions of the Town and Country Planning Act, 1932

The provisions of the Act may be summarised as follows:

A planning scheme may be made for any land whether it carries buildings or not. Special provisions relate to land belonging to statutory undertakers, buildings of special interest, agricultural land and certain other categories of land.

A scheme may be made with the general object of controlling future development, securing amenity, proper sanitary conditions and convenience, and preserving buildings of special interest and open spaces.

The scheme can control development in various ways: by requiring landowners to produce such plans of proposed development as will enable the planning authority to co-ordinate such development; it can prohibit development on unsuitable land either permanently or temporarily; it can prescribe the density at which building development is to take place; zone land for different classes of buildings;

regulate the size, height, and external appearance of buildings; protect land from advertisement hoardings; and protect trees and woodlands. The foregoing are only examples of the powers conferred by the Act.

The planning authorities under the Act are the City of London, London County Council, County borough and county district councils. Councils of country districts may relinquish any of their powers under the Act to county councils. Local authorities may also form and delegate their powers to joint planning committees. If requested by one or more of the authorities concerned the Minister of Health has power to set up a joint planning committee.

There are five main stages in the preparation of a scheme: (i) the pre-resolution stage which involves consultation with other authorities if these will be affected by the scheme. (ii) The resolution stage. The local authority or committee pass a resolution, which must be approved by the Minister, to prepare or adopt a scheme. (iii) Preliminary statement stage, which is optional. It comprises the preparation of a statement and map showing the general proposals of the scheme. (iv) Draft scheme stage. A draft scheme, illustrated by a map, is advertised and thrown open to public inspection. (v) Approval stage. The draft scheme is submitted to the Minister, who will hold a local enquiry into objections which are not withdrawn. The Minister may approve the scheme with or without modifications. The approved scheme must be laid before both Houses of Parliament and may be challenged in the High Court within a limited period on a point of law.

A scheme may be varied or revoked by a subsequent scheme which follows the same procedure of preparation and approval. A scheme may also be varied by a supplementary order.

Supplementary schemes may be made for any land included in a 'regional scheme'—i.e. schemes prepared by a joint committee.

Interim development. The regulation of development which takes place between the resolution to plan and the time when the scheme comes into effect is provided for in the following ways: (i) The Minister must make a general interim development order and may make special orders allowing the interim development of land either conditionally or unconditionally. (ii) The Minister may empower specified authorities to allow interim development. (iii) Applications to develop must be made to the specified authority. Appeals to the Minister may be made against refusal of permission.

Provision is made for compensation when land is injuriously affected by refusal of permission to develop.

A scheme may contain a provision prohibiting or restricting building operations on land until a general development order comes into

operation. This is to prevent premature development which would entail an abnormal burden on the rates. The authority must reconsider land which is still restricted every third year after the scheme comes into operation.

The authority may buy any land to which a scheme applies and which is needed for the purposes of the scheme, either voluntarily or compulsorily. The Minister's approval is needed for compulsory purchase. Land may be bought for, among other purposes, the establishment of garden cities.

HILL, H. A. *The complete law of town and country planning and the restriction of ribbon development*. 1937 pp. 2-11 (S)

### Defects of the Town and Country Planning Act, 1932

The system of planning provided by the 1932 Act, as by its forerunners, is one of local planning, based on local initiative and finance and responsible to local electorates. The Ministry of Health has had certain powers of central control, but the powers conferred on the Ministry by Parliament were regulatory and restrictive rather than positive and constructive. The Ministry's function has been largely that of a quasi-judicial body to secure fair play to owners of property.

This system incorporates a valuable and necessary control over land use but has these important defects:

(1) Planning powers are permissive only, and a large part of the country is not covered even by a resolution to plan.

(2) Planning schemes being local, questions of planning and development are considered largely from the viewpoint of their effect on local authority finances and local trade. A proposed development which it might be against the national interest to locate in a particular local authority area, is not likely to be refused when refusal would entail heavy compensation and deprive the authority of additional rate income.

(3) The planning powers of local authorities are regulatory and do not enable them to undertake or secure positive development. '... a planning scheme secures that, if development takes place, it shall take place only in certain ways; it does not secure that in any particular part of the area of the scheme it will in fact take place.' (Marley Report.)

*Ministry of Works and Planning. Expert Committee on Compensation and Betterment. Final report (the Uthwatt report). Cmd. 6386 1942 paras. 13-14 (S)*

**Provisions of the Town and Country Planning (Interim Development) Act, 1943**

The principal features of this Act may be summarised as follows :

It brings all land in England and Wales not hitherto subject to planning control of any kind under interim development control as from 22nd October, 1943 (Section 1).

It strengthens the power of interim development authorities over interim development by empowering them to take immediate action with respect to development which takes place without permission or in contravention of a conditional permission. Before the passing of this Act, no action could be taken until the scheme came into operation (Section 5).

It confers powers on interim development authorities to postpone the consideration of applications for permission to develop in cases where the applicant fails to satisfy them that, if permission were granted, the proposed development would be carried out immediately (Section 2).

It reverses the provisions in Section 10 (3) of the 1932 Act that an application shall be deemed to have been granted if within two months no notice has been given to the contrary. The application is now deemed in those circumstances to have been refused (Section 2 (3)).

It makes clear that interim development authorities may grant permission for a limited period and provides what are to be the consequences of such temporary permissions (Section 3).

It empowers interim development authorities to revoke or modify interim development permissions already granted where the development sanctioned has not already been carried out or completed and the scheme has not come into operation (Section 4).

It makes provision for the interim preservation of trees and woodlands by means of "interim preservation orders" (Section 8).

It provides for compensation in respect of matters dealt with by the Act in accordance with the principles relating to compensation laid down in the 1932 Act.

HILL, H. A. *The complete law of town and country planning and the restriction of ribbon development. 1st Supplement to 2nd Edition 1944 p. A49 (S)*

**Main provisions of the Town and Country Planning Act, 1944**

Despite its title, the major portion of the Act deals with land acquisition and not with planning, and new powers of compulsory acquisition for a variety of purposes and by a much speedier procedure are conferred on local authorities.

On the application of a local planning authority, the Minister of Town and Country Planning may make an Order (hereinafter called a 'Designation Order') declaring an area of extensive war damage to be subject to compulsory purchase for purposes of being laid out afresh and redeveloped as a whole. The application for this Order must be made within 5 years of a date not yet announced. (Section 1-1.)

An area of extensive war damage will generally be a congested area and its redevelopment on sound lines will cause an 'overspill' of population and industry which will have to be re-located elsewhere. A local planning authority can apply for a Designation Order in respect of any land required for 'overspill' purposes in connection with an area of extensive war damage. (Section 1-2.)

A local planning authority may receive grants from public funds towards their expenses in acquiring and clearing land in an area of extensive war damage or in an associated 'overspill' area. (Section 5.)

A local planning authority may acquire compulsorily any area of land within their boundaries which, for reasons of obsolete development or bad lay-out, ought, in the Minister's view, to be laid out afresh and redeveloped as a whole. The authority may also acquire land for associated 'overspill' purposes. No grants from public funds will be made towards the expenses of acquiring or clearing land for these purposes. (Section 9.)

A local planning authority may also acquire land compulsorily for certain other purposes (Section 10) but no grants from public funds will be payable.

A local authority having power to make an Order under Section 17 of the Town and Country Planning Act, 1932, may, with the Minister's consent, acquire by agreement a building of special architectural or historic interest (Section 43-9(a)). If an Order under the said Section 17 is in force in respect of such a building and the building is not being properly maintained, the local authority are authorised (at their own expense) to acquire the building compulsorily. (Section 49-9 (b).)

A local authority may acquire land outside its own boundaries. The Act does not provide for the local authority to extend its boundaries to take in land so acquired. On the contrary, the Act provides that the Minister may provide that the land shall be acquired, not by the authority who have need of it (the promoting authority) but by the authority in whose area the land is. (Section 12.)

In certain circumstances, an owner of war damaged land can require the land to be bought by the local planning authority (Section 11.)



*Disposal of Land*

A local planning authority who have acquired land under the Act may, subject to certain restrictions, dispose of it in such a manner as will ensure its best use. (Section 19-2.) The Minister's consent is necessary to any disposal and will not usually be granted for disposals by sale or by lease for a longer term than 99 years.

Disposals of land must be conducted in such a manner as will secure, so far as is practicable, an opportunity for persons who were living or carrying on business on the land before it was acquired by the authority, to return and resume residence or business on the land. (Section 19-6.)

A local authority can themselves carry out development, with the Minister's consent, on land acquired or appropriated under the Act providing no one else is willing and able to do so. (Section 20.)

Provision is made for the extension and modification of the powers of statutory undertakers so that they may provide satisfactory services in connection with any purpose for which land is acquired under the Act (Section 26). Conversely certain safeguards for statutory undertakers are also provided.

*Planning Provisions*

The Minister's functions under the Act include: (1) the confirming or making of compulsory purchases orders; (2) giving consent to, or requiring, the disposal of land acquired under the Act; (3) giving consent to the carrying out by an authority of building operations under the Act.

In order to discharge these functions, the Minister can require local planning authorities to give him information about their planning proposals (Section 31-1). Certain functions are conferred on the Minister by the Town and Country Planning (Interim Development) Act, 1943, and in order to discharge these functions he can call upon interim development authorities for information about interim development applications (Section 31-2).

Interim development control of development by statutory undertakers is subject to strict limitations, but these apply only to land used by a statutory undertaker for operational purposes and not to land used for other purposes. (Sections 34-37.)

A joint planning committee can be appointed for any purpose connected with the preparation or review of a planning scheme relating to the areas of any of the authorities represented on the committee. (Section 40-1).

Agricultural buildings become subject to planning control. (Section 41.)

It is now open to the Minister to compile lists of buildings of special architectural or historical interest or to approve such lists compiled by other persons. (Section 42-1.) Once a building is listed the owner may not demolish or alter the building in a way which seriously affects its character without giving two month's notice to the local planning authority (Section 43-5).

Any appeal with respect to the design or external appearance of a building may, if the planning scheme so provides, lie to the Minister instead of to a Court of Summary Jurisdiction or to a special tribunal. (Section 44.)

### *Compensation*

Part 2 of the Act provides a new code for the assessment of compensation in connection with the compulsory acquisition of land for public purposes. The new code applies whether the acquisition is pursuant to this Act or not, but its operation is limited to the period of five years from 17th November, 1944.

Subject to certain limitations, compensation in respect of the compulsory acquisition of land for public purposes, provided the notice to treat is served before the 17th November, 1949, shall be assessed by reference to prices current on March 31st, 1939. (Section 57-1.)

Supplementary compensation may be payable to an owner-occupier of either a building or agricultural property. This may not in any circumstances exceed 30 per cent. of the 1939 value of the property. (Section 58-2 and 3.)

HEAP, DESMOND *The town and country planning act, 1944: an annotated analysis of the act.* 1945 pp. xvii-xl (S)

### **Provisions of the 1947 Bill**

The main objects of the Bill are: to set up a new planning system to meet present-day needs; to produce a comprehensive solution of the problem of development values in land, and thus remove one of the main obstacles to good planning; and to provide Exchequer grants to help local authorities to buy and clear land for the execution of plans.

### *The New Planning System*

The pre-war planning 'scheme' which once approved was difficult to change, will be replaced by a more flexible 'development plan'. The plan will first be prepared in outline to cover a wide area.

It will show, for example, the towns and villages which are suitable for expansion, the direction in which a city will expand, and the area

to be kept as a green belt. Detailed local planning of roads, buildings, etc., will be done when development is about to take place.

Plans will be prepared by county councils and county borough councils, or by several such councils combined in a Joint Planning Board. The transfer of powers from smaller authorities has been dictated by the need to secure co-ordination of planning over wide areas. Planning authorities will keep in touch with local opinion and will receive guidance from central Government, so that the plan will be a fusion of local and national needs.

Every planning authority will be required to carry out a survey and prepare a plan within three years. The plan will be subject to the Minister's approval. Plans must also be reviewed every five years.

Planning control will operate in much the same way as does the present interim development control, but will continue after the development plan is approved. Subject to any exemptions that are prescribed, all development must receive prior approval.

A good deal of the work of planning control may be delegated by county councils to county districts—at least after the plan is approved.

The best way to ensure that plans are carried out is often to make the land available for any development which the plan shows to be desirable. Local authorities are therefore empowered to buy land compulsorily for leasing to the private developer.

These powers supplement those contained in the Town and Country Planning Act, 1944, for the acquisition of war damaged areas or areas of obsolete development.

The plan can designate as 'subject to compulsory purchase' land likely to be required within, say, 10 years for development by Government departments, local authorities, statutory undertakers, or private enterprise.

The plan thus indicates both long-term principles and also a reasonably firm short-term programme. Each five-yearly review can designate further land, thus enabling a 10 year programme to be set and kept up to date.

The Bill gives wider powers to local authorities to carry out development themselves. They are no longer confined, as under the 1944 Act, to development which private enterprise will not undertake.

Inside an administrative county, purchase and development will be exercised by county district councils, since, although the plan should be prepared over a wide area, its execution is primarily a local job.

The Bill also gives power: (a) to require (on payment of compensation) the alteration or removal of existing uses that conflict with the plan; (b) to control advertisements under a national scheme; (c) to preserve buildings of architectural or historic interest.

*Development Values in Land.*

The Barlow and Scott reports both stress that the main obstacle to good planning under existing law is the difficulties that arise over compensation and betterment.

Planning necessarily places restrictions on the way in which owners can use their land. Sometimes such restrictions have no effect on the value of the land—e.g. farming land in remote rural areas.

Where, however, there is some prospect of the land being developed, the value may consist of two elements: (a) its value for its existing use: (b) an additional value arising from the possibility of a more profitable use—i.e. 'development value'.

A restriction on development removes development value and under present law compensation has usually to be paid for its loss.

This compensation is inflated by the factor of 'floating value'. The Uthwatt report states that development value, being potential value, is speculative. The hoped-for development may take place on a particular piece of land, or it may not.

The rate of development around a given town in past years may show that the total of development, during any period of the future which commands present value, will only be enough to occupy a portion of the land available. But every landowner can claim that his land will be chosen. If therefore the various parcels of undeveloped land are compulsorily acquired one at a time, and the owners are compensated for loss of development value, the total compensation paid may greatly exceed the actual total loss. The Uthwatt report estimated that this over-valuation produced a figure between two and three times as great as the actual possibilities.

The Uthwatt report also draws attention to 'shifting value'. Planning control moves land values, it does not destroy them.

The total of development remains the same. If development is prohibited on one piece of land, values are merely shifted to some other piece of land. What one owner loses, another gains.

It has proved impossible in practice under existing law to collect the 'betterment' from the owner who thus gains, and to use it to pay compensation to the one who loses. It has been found impossible to establish the amount by which one piece of land has been increased in value as a direct consequence of a planning restriction on another piece of land and not from other causes.

The result is that planning has so far been ruled almost entirely by short-term financial considerations. Local authorities have not been able to pay heavy compensation for loss of development values, and have had to allow development to take place in a haphazard, unsatisfactory way.

Suburbs have spread in a mass of houses unbroken by open spaces. When local authorities buy land they have to pay prices swollen by 'floating values'.

There has therefore been a tendency to site schools and other community buildings wherever land was cheapest.

The solution proposed in the Bill is as follows:

(a) No development may take place without permission. An owner is free to go on using his land for its existing use (and if for special reasons he is restrained from doing so, compensation is payable), but the question of whether the land may be developed for another use will be governed by considerations of what is best for the community.

(b) When permission to develop is refused, no compensation will be payable in future, except in a few special cases.

(c) When development is permitted, any resulting increase in land value will be collected in whole or in part by the State by means of a 'development charge' which must be paid or secured before the development takes place. (Increase in land value that occurs without any change of use is left with the owner).

(d) The effect of (a), (b), and (c) together is that the market value of land in the future will be reduced broadly to its value for its existing use.

Landowners lose their development rights forthwith and the Bill enables payments to be made to them on account of this loss.

(e) The making of such payments and the collection of development charges are to be centralised and handled by a Central Land Board.

In future there will be no question of a local authority having to meet the cost of extinguishing development values. A decision on the proper use of land will be taken on its merits.

The Government take the view that owners who lose development value as the result of the passing of the Bill are not on that account entitled to compensation. But they recognise that if no payments were made hardship would be caused in many cases.

They have therefore fixed the sum of £300 million from which payments may be made to landowners in the form of negotiable Government Stock.

This sum covers England, Wales, and Scotland, and payments will be made not later than 5 years after the Bill comes into force.

### *Grants to Local Authorities*

In addition to the difficulties created by development values, planning has also been hampered—especially in the central areas of towns—because high land values for existing land in central areas is split into many ownerships, and proper replanning usually requires

the whole area to be bought by the local authority and redeveloped as a single unit.

Redevelopment involves some thinning-out—wider roads; more open spaces—and some firms working in the area and some people living there must be moved out.

While therefore the local authority must pay prices for the land, they may not be able to recoup themselves financially. Initially, at any rate, redevelopment of a central area can usually be carried out only at a loss, and this has been a serious deterrent to such work.

The Town and Country Planning Act, 1944, gave grants to local authorities towards expenditure on buying and clearing land for the redevelopment of areas of extensive war damage. Provision is made in the Bill for the substitution of a revised grants scheme, with retrospective application to redevelopment schemes begun under the 1944 Act. The new grant scheme also covers areas of bad layout and obsolete development that need redevelopment as a whole, and areas of derelict land which are to be reclaimed.

Grants will be payable towards loan charges on the cost of buying and clearing such land until it is ready for constructional work, and thereafter towards loan charges on any loss that remains.

The total cost to local authorities for the acquisition and clearance of land in war-damaged areas may be £600 million spread over 25 years.

The cost to local authorities as regards areas of bad layout or obsolete development is not expected to exceed £15 million a year for the next five years, after which cost is likely to rise.

The scale of grants will be determined by Regulations, but it is proposed that an annual grant will be payable for a period up to 60 years, at varying rates for different parts of the grant period; and that the maximum rates should be 90 per cent. for areas of war damage, and 80 per cent. for areas of obsolete development. The grants will be conditional on the Minister being satisfied with the kind and pace of redevelopment, and the arrangements for the disposal of land.

The cost of grants is estimated to amount to £100,000 in the year ending 31st March, 1948, rising to £3 million per annum in 1953; and to an ultimate peak of 2 to 3 times that amount.

Grants will also be made to local authorities towards the payment of compensation provided for in the Bill in certain special cases.

*Ministry of Town and Country Planning. Town and Country Planning Bill, 1947. Explanatory memorandum. Cmd. 7006 1947 paras. 1-46 (S)*

**Aims and organisation of planning**

'The advance towards a new conception of planning under positive central direction crystallised in these recommendations of the Barlow Commission marks a turning point in the evolution of planning in this country. It must, as it seems to us, be accepted from these recommendations that the character and situation of all future development, whether domestic or industrial, must ultimately be governed by considerations such as the distribution of the population; the problems of defence and communications; and the claims of agriculture. From this it follows that private and local initiative must be subjected to State control. This necessary conclusion does not involve the suppression of individual initiative and enterprise, but it does involve acceptance of the view that the State must determine the areas in which they may operate.

'There are, however, two assumptions upon the positive aspects of planning which have to be made, and upon which our recommendations are based.

'The first assumption we have made is that national planning is intended to be a reality and a permanent feature of the administration of the internal affairs of this country. We assume that it will be directed to ensuring that the best use is made of land with a view to securing economic efficiency for the community and well-being for the individual, and that it will be recognised that this involves the subordination to the public good of the personal interests and wishes of the landowners. Unreserved acceptance of this conception of planning is vital to a successful reconstruction policy, for every aspect of a nation's activity is ultimately dependent on land. The denser the population, the more intensive the use of land becomes in order that the limited area may be capable of furnishing the services required; the more complex the productive organisation of society, the more highly-developed must be the control of land utilisation exercised by or on behalf of the community.

... 'The second assumption we have made is that while the principal of national planning has, as we have stated, already been accepted by the Government, much remains to be done to carry it into effect, and the precise shape of the future planning policy and the degree of centralisation are as yet undetermined. We wish to make it clear, however, that the system we regard as necessary for an effective reconstruction, and which we have therefore assumed, is one of national planning with a high degree of initiation and control by the Central Planning Authority which will have national as well as local considerations in mind, will base its action on organised research into the social and economic aspects of the

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use and development of land, and will have the backing of national financial resources where necessary for a proper execution of its policy.

'It is apparent, therefore, that the Central Planning Authority we have assumed is an organisation which does not yet exist, and that "planning" has a meaning not attached to it in any legislation, nor until recently, in the minds of the public.'

*Ministry of Works and Planning. Expert Committee on Compensation and Betterment. Final report (the Uthwatt report). Cmd. 6386 1942 paras. 15, 17 (E)*

### Areas covered by planning schemes and resolutions, June 1942

	<i>Total acreage</i>	<i>Acreage covered by operative planning schemes</i>	<i>Acreage in respect of which resolutions to plan approved, but schemes not yet operative</i>
England	32,209,112	1,664,862 (5%)	23,609,740 (73%)
Wales	5,139,103	55,187 (1%)	1,870,078 (36%)
Scotland	19,453,618	89,409 (0.4%)	1,711,533 (9%)
Totals	56,801,833	1,809,458 (3%)	27,191,371 (48%)

*Ministry of Works and Planning. Expert Committee on Compensation and Betterment. Final report (the Uthwatt report). Cmd. 6386 1942 p. 9 (E)*

### Advantages and disadvantages of decentralisation

'Obviously, advantages and disadvantages would both be inherent in a city of the decentralised pattern. There would be a far greater length of street and public services per unit of population, a cost item which would not be compensated by the smaller sizes required, but which probably would be compensated by the saving in making unnecessary the great expense of street widening projects in the other type of city. Wacker Drive [Chicago], a mile long, cost about \$26,000,000, enough to build seven hundred miles of concrete country road or two hundred miles of fully improved city street. The circle of population centres would be farther removed from the down-town administrative and cultural area. But while not over



10 per cent. of the entire population would travel to the down-town district each day, every workman, family shopper, school child and movie-fan would presumably be much nearer his daily objective, and could reach it over comparatively uncrowded streets. The gross saving in car fares or auto use, and more important, in nervous energy, would be enormous. The limitation put upon the development of each nucleus might hinder the expansion of some huge industry. Suppose, Gary, Indiana, now a city of 100,000, had been limited, by control of land area and density of land use, to a population of 50,000 people in conformity with the English Garden City ideal. My feeling is that it would be better to pay an added tenth of a cent per pound for steel, made necessary by dividing the steel works between two towns, than to bear the costs of congestion and delay and of eventually having to rebuild an over-centralised Gary. The decentralised regional city would, if consistently controlled, make impossible the exploitation of grossly overbuilt land values. I would be glad of that, but the average American citizen to whom land exploitation is the great outdoor sport might be expected to object. There would be less occasion for the large expense of demolition and rebuilding that goes on in the typical city of shifting districts, poor land planning and cheap building construction. Less noise and dirt, more light and air and open space, and a more cohesive spirit, would accrue to each sub-community of the great regional city.'

CRANE, JACOB L., JNR. *Decentralisation—eventually but not now. Town Planning Institute Journal Vol. xiii No. 12 1927 p. 333 (E)*

### Definitions

The following definitions and descriptions of the aims of town and country planning or its synonyms appear in the works quoted:

*Town-Planning.* The preparation and construction of plans in accordance with which the growth and extension of a town is to be regulated, so as to make use of the natural advantages of the site, and to secure the most advantageous conditions of housing and traffic, the convenient situation of public buildings, open spaces, etc. 1906, 1907. (*New Oxford English Dictionary*. 1926.)

*City-Planning.* Arranging or laying out by an organised plan the streets, parks, recreation centres, business sections, etc., of a city, with a view to securing health, convenience and aesthetic qualities. Washington, Paris and Vienna are examples of city-planning. (WEBSTER. *New International Dictionary of the English Language*. 1934. U.S.A.)

*Town- and City-Planning, Regional Planning.* The terms town-planning and city-planning are used to designate the modern movement to plan the growth of cities, towns and villages, particularly with respect to the development of land for building purposes and systems of circulation. When, for purposes of planning, it is necessary or desirable to deal with an area which embraces a number of adjacent communities that have separate local Governments, the movement is described as regional planning. (ADAMS, THOMAS. *Encyclopaedia Britannica*. 14th Edition.)

*Town and Country Planning.* An Act to authorise the making of schemes with respect to the development and planning of land, whether urban or rural . . . to provide for the protection of rural amenities and the preservation of building and other objects of interest or beauty; to facilitate the acquisition of land for garden cities; . . . (*Preamble. Town and Country Planning Act, 1932.*)

*National Planning of land use.* We assume that national planning will be directed to ensuring that the best use is made of land with a view to ensuring economic efficiency for the community and well-being for the individual. . . . (*Ministry of Works and Planning. Expert Committee on Compensation and Betterment [the Uthwatt Committee]. Final Report. Cmd. 6386 Sept. 1942, para. 17.*)

*'Planning' of land use.* The Government has announced that it will formulate and execute national and positive policies of urban and rural development. . . . Unless the various types and units of development are co-ordinated and regulated and, where necessary, prohibited, by suitable machinery, the best use of the land of the country will not be attained. This is the true function of 'planning'. (*Ministry of Works and Planning. Committee on Land Utilisation in Rural Areas [the Scott Committee]. Report. Cmd 6378 Aug. 1942, para. 17.*)

*Planning Schemes.* The touchstone of what constitutes a planning scheme is this matter of relationship, the accommodation of several units to make a complete but harmonious whole. The juxtaposition of independent units, however perfect in themselves, which remain distinct, does not produce a planning scheme; nor does the con-course of units, however large, which makes a mere mass or muddle. Planning is a conscious exercise of the powers of combination and design. . . . (ABERCROMBIE, P. *Town and Country Planning*, 1933, p. 11.)

*Town-Planning.* The attempt to meet, no longer piece-meal and from day to day, but with intelligent foresight, the complex needs of a great town of progressing affairs and growing population, and of supplying the demands of modern industry without forgetting those of modern populations. Place, work and folk—environment, func-

tion and organism—are thus no longer viewed apart but as the elements of a single process—that of healthy life for the community and the individual. (GEDDES, P. *Cities in Evolution*. 1915, p. 198.)

### Definition of urban blight

The term 'blight' is used to mean the progressive deterioration, at first barely noticeable but ending after many stages in slum conditions, which occurs in residential districts of cities.

One fundamental cause of the process is a change of use. One of a row of dwellings may be converted into a grocery. This increases the income derived from this one building but lowers the desirability, and hence the value, of neighbouring houses. Similarly a single family dwelling may be enlarged into a multi-family dwelling covering a large amount of its plot area, possibly cutting off light from adjoining buildings and compelling its tenants' children to play in neighbours' gardens or yards. The ill effect in both cases is suffered first by adjoining properties rather than by the property whose use is changed.

It is the slowness of natural change of use which is the essence of blight. Change of use is itself wholesome and necessary. But when the process drags on, building by building, for decades, leaving some buildings still occupied as dwellings while industry and commerce destroy the residential amenities of the neighbourhood, it is harmful.

An area consisting of many small holdings is more liable to blight in that it is difficult for private enterprise to assemble large enough sites for flat blocks or other large scale redevelopment.

*Source:* PERRY, C. A. and MORROW, C. EARL. *The rebuilding of blighted areas*. Report by the Regional Plan Association, New York.

*Town Planning Institute Journal Vol. xx No. 4 1934 pp. 112-113 (S)*

### First official town planning schemes

'The First Scheme approved under the Housing, Town Planning, etc. Act 1909 was the City of Birmingham (Quinton, Harborne and Edgbaston Town Planning Scheme) (2,320 acres), 31st May, 1913. The East Birmingham Scheme (1,442 acres) was approved on the 18th August, 1913, and the Ruislip—Northwood Scheme (5,906 acres) on the 7th September, 1914.'

PEPLER, G. L. *Twenty-one years of town planning in England and Wales*. *Town Planning Institute Journal Vol. xvii No. 3 1931 p. 51 (E)*

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### Main provisions of legislation, 1909-1932

The planning machinery provided by the Housing, Town Planning, etc. Act, 1909, proved cumbersome and difficult to operate and improvements which it was hoped would facilitate the making of schemes were provided in the Housing, Town Planning, etc., Act, 1919, whereby the necessity of first obtaining the consent of the Local Government Board [later the Ministry of Health] to the making of a scheme was in most cases removed, as also was the need to lay schemes before Parliament. Section 45 of the 1919 Act first introduced interim development, whereby development of land might continue during the preparation of a scheme and the developer yet remain certain—presuming he followed the instructions of Section 45—of obtaining compensation if his scheme was injuriously affected by the making of the scheme. The Act rendered it obligatory for certain local authorities with a population of more than 20,000 to prepare a scheme within a specified period, and it was possible for the Board to require a local authority to prepare a scheme. Two or more authorities might prepare a joint scheme and appoint a joint committee for the purpose.

The Housing, etc., Act, 1923, Part 2 of which dealt with town planning, made further slight amendments in planning law, the most important of which was the power given to an authority to withdraw or modify any provisions in a scheme which had given rise to an award of compensation in respect of injurious affection being made against the authority.

The Town Planning Act, 1925—the first Act to be wholly devoted to town planning—consolidated the former planning enactments without introducing any important new features.

The Local Government Act, 1929, first gave power to county councils to act jointly with other local authorities in the preparation of planning schemes, and to be the authorities responsible for enforcing and carrying into effect the provisions of a scheme, and county district councils were entitled to relinquish to a county council planning powers granted to them under the 1925 Act. Such was the state of affairs when the Town and Country Planning Act, 1932, was passed.

HEAP, DESMOND *Planning law for town and country*. 1938  
pp. 5-7 (S)

### Organisation of the Ministry of Town and Country Planning, 1944

The Ministry was set up in February 1943, under the Minister of Town and Country Planning Act, which laid upon the Minister 'the duty of securing consistency and continuity in the framing and execution of a national policy with respect to the use of land through-

out England and Wales'. We inherited the tradition, and some of the experienced personnel, of the old Planning Division of the Ministry of Health; but with the problems created by the war demanding solution it has been necessary to lay the foundations of a Department to meet the unprecedented, and largely incalculable demands of the future. We are still only in the early stages of a long process of development, and an element of the experimental inevitably enters into our organisation.

The Department is divided, under its Ministerial and permanent chiefs, into a number of Divisions according to the usual practice of Government Departments. But the proportions and nature of these divisions are somewhat unusual, and reflect our peculiar problems. The Divisions are Establishment, Public Relations, Legislation, Plans and Research.

The Establishment Division deals with organisation and staffing, and the Public Relations Division with propaganda and publicity. The latter includes a modelling unit which prepares models both for technical purposes and for public exhibition.

The Legislation Division is of special importance. The setting up of the Ministry was only the first step in a series of enactments, of which the Town and Country Planning (Interim Development) Act, 1943, has already been passed, and the Town and Country Planning Bill, 1944,—a most complex and controversial measure—is now before Parliament. We have also published the White Paper on *The Control of Land Use*, which foreshadows further legislation. We have, in fact, largely to make planning law, before we can administer it, and it will be a long process.

The Plans Division carries on the day to day work of planning administration through local authorities and controls the Regional organisation and Inspectorate. The Regional Planning Officers, 10 in number, are the Ministry's representatives in the field, and are intermediaries between local authorities and the Ministry. They are technical officers and their functions are advisory rather than executive. The Planning Inspectors are, of course, the officers who hold public enquiries on my behalf—a task which requires both technical and judicial qualities. The Division's structure is, we believe, capable of large expansion to meet post-war needs.

The Research Division is perhaps the Division of greatest interest to planners. Its function is to assemble and present the factual and scientific data upon which all planning policy must be based. The planning of a modern community can only take place in the light of wide and exact knowledge, not only of its physical development, but of its underlying conditions, including social and economic conditions. The Division is staffed chiefly by specialists and technicians

and one of its main fields of work is that of planning technique: the part contributed by the Ministry to the Dudley Report indicates the calibre and scope of work in this field.

The Maps Section, another Section of the Division, meets the demands for specialised maps of all kinds by our own Ministry, other Departments and local authorities. It collaborates closely with the Ordnance Survey. The Section is also carrying on the project, originated by the National Atlas Committee of the British Association, of compiling a series of maps, on the 10 miles to an inch scale, to show the physical characteristics of Gt. Britain and also the distribution of population and industry, land use, types of farming and other information.

The Division has now a Research Officer in most of the main regions whose work is to make a Regional Survey, which is designed to give a broader picture of local conditions than is usually contained in a local planning survey. These Regional Surveys will include industrial, economic and social conditions and will be of great value when I consider, in conjunction with the appropriate local authorities, the Regional aspects of planning schemes.

Other problems being examined by the Division include the planning problems raised by the surface and underground working of minerals, and what may be called the amenity aspects of the Ministry's work. A report on National Parks has been prepared and several sample surveys made of potential National Parks. In addition, a survey of almost the whole of the coastline of England and Wales has been made for the Ministry by Mr. Steers in order to assist studies of coastal development and preservation.

The Ministry's Library is included in the Research Division and is becoming widely used. It is compiling both Central and Regional bibliographies which will show the literature which exists on any planning subject and where the relevant books are to be found.

*Minister of Town and Country Planning (Morrison, W. S.).  
Town Planning Institute; Report of the Town and Country  
Planning Summer School. 1944 (S)*

### National, regional and local planning

The town or country planner, whether operating in a wide or narrow field, is concerned with making a physical plan of land use. But he cannot plan, except in the light of some idea of the numbers of people who will be living or working in the area, the types of agricultural and industrial development that are to be expected and standards of living that the inhabitants are to enjoy. Usually the planner can have no accurate knowledge of any of these matters, and must

therefore make his plans elastic in order that they may not be upset whatever development, within wide limits, may take place. That is why most city plans provide for very big increases of population, even though population may soon fall.

Local and regional planners can afford to plan more realistically only in so far as they can base their anticipations on wider plans: to the extent to which any regional plan is laid down for influencing or directing the economic development of the area as a whole, the range of doubt for each town or district within it is narrowed. Similarly, if anything in the nature of a national plan exists for the distribution of industries and population between the regions, the range of doubt for each region becomes less.

There is, however, an important difference between a regional and a national plan. The regional planners must be mainly concerned with what is likely to be the effect of forces which are outside their control—whether uncontrolled forces or the conscious actions of national policy. Framers of a national planning policy, on the other hand, will not only be studying the movement of economic and social forces but also trying to influence that movement.

This is the point at which what is ordinarily called 'physical planning', the special concern of the Ministry of Town and Country Planning and the regional and local bodies which it guides, runs into the wider 'economic planning' with which it is so often confused.

The post-war position both of town and country planning and of the building and civil engineering industries will depend, in both the long and short run, on the policy adopted by the Government in dealing with the major problem of the distribution of industry and population.

If the Government should decide to leave the future structure of industry and the movement of population to the same blind forces as have governed them in the past, and to confine its activities to help in the repair of bomb-damaged areas and in catching up, in the purely quantitative sense, with the arrears of construction and maintenance that have accumulated during the war, there will probably be a short-lived boom in the building and associated industries, followed by a severe slump. On the other hand, if the Government's plans for post-war physical planning and development are based on a real attempt to adapt the entire structure of Great Britain to modern standards of amenity and the economic requirements of the modern technical world in which we shall have to live, there will be work for an expanded building industry for as far ahead as it is profitable for us to try to look.

COLE, G. D. H. *Building and planning*. 1945 pp. 28-31 (S)

**Life for non-conforming use**

'The hampering effects on reconstruction and redevelopment of the present provisions for the protection of existing buildings and uses have been the subject of strong representations to us, and various suggestions for solving the problem have been put forward. Generally they proceed on the view, which we think is a right one, that a building or existing use should not, if contrary to the provisions of the scheme, be given a perpetual right of maintenance or continuance. In short, a "life" should be placed on any "non-conforming" building or use, and the right to maintain, replace, extend or use a building would be subject to that "life". What the "life" should be would depend on the circumstances of each case, and among the factors to be taken into account should be:

(i) The probable effective physical life of the building in view of its age and condition;

(ii) Its probable effective economic and income-producing life, having regard to the possibility of the site being put to a more profitable use by rebuilding (that is, the actual income being received should be compared with what a new building would produce);

(iii) The degree and nature of non-conformity or of the detriment caused by the particular building or user. (For example, the "life" of a residential building in an industrial area should normally be greater than the "life" of an industrial building in a residential area.)'

*Ministry of Works and Planning. Expert Committee on Compensation and Betterment. Final report (the Uthwatt report). Cmd. 6386 1942 para. 245 (E)*

**Optimum size of towns**

'The bigger aggregations represent far larger rateable values and are in a position, financially, to provide more elaborate services than the smaller towns. The suggestion is sometimes made that a small town is capable of more economical administration than a large town. Any attempt to probe this claim is faced at the outset with the difficulty that a scientific basis of comparison is not available since substantial variations in costs occur between towns of the same size owing to differences in the standard of the municipal services and for many other reasons, such as the character of the town (e.g. whether it is a pleasure resort and manufacturing centre) and its situation. Even when examination is made of the cost of certain services selected as being least likely to be affected by considerations of that kind it proves difficult to substantiate the claim or to show that



from the point of view of cost of municipal services there is an optimum size for towns. In any case the test is not cost but efficiency. Sewage disposal in a large town . . . may obviously cost more than in a rural area with no sewerage system at all; but that is no proof that the complete system is not worth paying for.

'Advantages arising from the concentration of population are strongly evident in other directions. In elementary, higher and technical education alike, a large concentration is able to provide more varied, more efficient, and more readily accessible facilities than a small town unless that small town forms part of a larger unit. It is not too much to say that educational and recreational opportunities generally, as represented by schools and colleges, museums and art galleries, theatres and cinemas, clubs, lectures and social intercourse of many kinds, are more highly developed in the large centres of population, a factor of which the advantage extends in varying degrees to all classes of the community.'

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow Report). Cmd. 6153 1940 paras. 164-167 (E)*

#### Total population zoned for under the 1932 Act

'... the [Town and Country Planning Act, 1932 (in Section 19 (1))] provides that "no compensation shall be payable" as regards the control of the space about buildings, their number, their appearance, or their use. . . . Among the controls which are thus not subject to compensation the so-called density control is one of the most important.

'It is this last loophole of escape from compensation that has led many authorities to the apparently paradoxical device of attempting to preserve land for agriculture by zoning it for building. By stretching a point or two, it could be argued that not only was a restriction allowing not *more* than so many houses for each acre a proper form of density control, but that equally so was a restriction requiring not *less* than so many acres for each house. Using this somewhat doubtful device, many local authorities and joint planning committees . . . have attempted to do something towards that preservation (of agriculture and the countryside) and at the same time dodge the ever-present bogey of compensation, by zoning the greater part of the rural land in their areas at building densities of 1, 3, 5, 10, or even 50 *acres per house*. . . . It is in this way that the fantastic planning record was achieved by 1937—a time of almost stationary population—that the amount of land [in England and Wales] which had then been zoned for housing in schemes that had reached an advanced

stage of preparation (considerably less than half of the schemes which were actually being prepared) was large enough to accommodate a population of nearly 300,000,000 people additional to our present population of 41,000,000.'

*Ministry of Works and Planning. Committee on Land Utilisation in Rural Areas. Report (the Scott report). Cmd. 6378 1942 paras. 143, 144 (E)*

#### Basic assumptions for post-war redevelopment

The conditions under which post-war rebuilding must be undertaken may be summarised as follows. The end of the period of land expansion must be accepted: the balancing of local resources is a complementary process to the establishment of a balanced world economy, and the two go hand in hand. The end of the period of mechanical industrial expansion must also be accepted.

Except in very backward countries, industrial systems throughout the world have largely been mechanised and instead of the complete renovation of industry which took place in the nineteenth century opportunities for further mechanisation are confined to new industries with a consequent fall in the demand for new capital goods. Lastly, the period of expansion of population shows every sign of ending in advanced industrial countries; and it should be noted that in America towns of over 25,000 population have a birth rate less than is necessary to keep their population stable and as the size of the city grows so does the rate of population increase decline.

So far the end of the period of expansion has been recorded in conflicts for territory and markets, in schemes for pecuniary security to compensate for unemployment, in efforts to stabilise by military conquest and slavery.

Now is the time to envisage and incorporate a fresh ideal of life based on the premise of stabilisation. If we ask ourselves, not how to rebuild our metropolitan areas and keep our machines running when the war comes to an end, but how to keep life running, with or without the aid of machines, in or outside of our urban areas, we shall enable ourselves better to understand the conditions for urban and regional development that open before us.

The ideal personality for the opening age is a balanced one, capable of treating economic and aesthetic experiences, parental and vocational experiences as a related part of a single whole: namely, life itself. This is clear if we call to mind the patent dangers of a state of stabilisation. Organisations that have been stabilised for any length of time become embedded in routine and hostile to change. Stability and security will result in a caste division of labour and unless shaken

by some outside force these divisions harden and the capacity for adaptation disappears.

It is precisely because stabilisation carries with it this danger that we must introduce, into our conception of the type of personality needed, the ability to touch life at many points and, by continued reaction and interplay, break up the tendency to fall into a single fixed mould.

The varied war experiences that the British and Russian populations have undergone as soldiers, air raid wardens, nurses, etc., must be regarded, in their peaceful equivalents, as normal requirements for a period of stabilisation.

Plainly we cannot afford a war every generation to renew our emotional vitality and recover our animal sense of alertness. We must therefore arrange our environment and our course of life to prevent fossilisation.

The family unit should be given a central place in our economy and culture, and the planning of a proper environment for the family is the primary task in urban rehabilitation. If necessary, provision of the necessary space and privacy should be given preference over the refinements in modern equipment. During the first few post-war years this choice may determine not only the how but the where of building and we should clearly choose incompletely equipped buildings on the right pattern in the right place rather than fully equipped buildings elsewhere.

In England, this will mean priority in planning and building, not automatically in the largest or most bombed towns but in those places which promise most for the future. Post-war economic conditions must not be allowed to prevent this: it is land values or mechanical extravagances which must be cut down, not family dwelling standards.

We must cut down costs of upkeep also before standards; a group of intelligent mothers can run a nursery school and school children can look after parks.

Regional planning must not merely be devoted to maintaining open land; it must keep the countryside as an active, dynamic element in city life—growing food close to the market, and locating factories in the country.

Housing and community planning are not now functions that can be undertaken by separate municipalities. It is not simply 'housing' we must create but a new framework for domestic and regional life.

In short, we must continually remind ourselves that the period of expansion is over and that the great urban masses created by that period, are in the nature of things, bankrupt.

Good planning in the post-war age will rest on the solid founda-

tions of the family and the region. It will emphasise the biological and the social needs of the people and treat industrial and financial needs as subordinate. It will be less afraid of the primitive than of the over-sophisticated; it will distrust what is overgrown and mechanically complicated.

MUMFORD, LEWIS *City development: studies in disintegration and renewal*. 1945 pp. 165-197 (S)

#### Factors affecting the distribution and size of settlements

Planning must contend with four sets of inter-related problems: (1) Re-housing that part of the population which will remain in existing built-up areas of cities. (2) Provision of adequate community services for suburban populations. (3) Transfers of industry and people from congested urban areas to their peripheries (decentralisation) and into the countryside (dispersal). (4) Reorganisation of local government areas.

Planning with respect to settlement has three aspects: (1) Collection of social and economic facts; (2) formulation of basic principles and objectives in planning the future community, whether urban, rural or 'rurban'; (3) creation of central and Regional authorities to execute research, and draw up plans—with power to carry them out.

A main factor in this problem is the geographical. Planning of town and countryside and local government reorganisation are concerned respectively with land use and the definition of geographical areas. Consequently, it is necessary to know the geographical arrangement of neighbourhood relations, of the service areas of church, school, shop and other services. Such relations are complex and their areas overlap, but they are integrated into service areas through the medium of the central service centre, be it village, town or metropolis. There is a hierarchy of such areas from the State down to the neighbourhood area which is found in town and country alike. Ritchie Calder has called attention to the 'City Village'—a group of streets in the poorer quarters of the city which maintains an unconscious community sense.

Between the State and the neighbourhood unit, social, economic and cultural relations are focussed in the towns which integrate the life and organisation of the areas around them; and the towns themselves are integrated into a major area which is held together by a community of economic interests and the dominance of one or more great cities. The social sciences must establish the nature of the functions of village and town in selected regions, and determine the extent of the areas served by them. It will then be possible to define

the nature of more complex community relations as regards village communities, town and countryside, urban neighbourhood structure, and range of influence of metropolitan cities.

*Rural Settlement.* The overwhelming majority of parishes in Britain have less than 300 inhabitants: the village itself in eastern England has seldom more than 100–200 inhabitants. Local services are usually concentrated in an occasional village (about 1 in 5 in East Anglia) which in virtue of its specialised services assumes a certain urban character. In it are craftsmen (e.g. saddler), several specialised shops as opposed to the village shopkeeper, and a bank, open once a week. Such a village in East Anglia contains about 700 people (the parish from 700–1,000); whereas in Cardiganshire, with a much lower density of rural settlements, they often have less than 300 inhabitants. In both areas the service centres have the same pattern of distribution in relation to the distribution of settlement.

The need for regrouping the rural population has been given little serious attention. The rural community unit should be large enough to support a church, school, village clubs and ordinary shops. A population of 1,000–1,500 is advocated. A grouping of 3–5 parishes would give this minimum population, in eastern and southern England a compact area of about 9 sq. miles of which the furthest parts would be about  $1\frac{1}{2}$ –2 miles from the geometrical centre. In fact, this proposed kind of rational arrangement exists in the grouping of the urban village and the several parishes it serves.

To advocate the compact settlement as the nucleus of this ideal rural community unit area is absurd. It runs counter to the whole trend of settlement in Britain and ignores the differences of economy between arable, pastoral and moorland areas. The real problem is to ensure that suitable services and social life are brought within reach of farm workers.

*Towns:* Towns are compact settlements engaged primarily in two main non-agricultural occupations: industries and services. Industries can be broadly divided into *basic*, which are highly localised, and *secondary* or *local*, which cater for the needs of the population of the town and are therefore widely distributed, proportional to the density of population and local standard of life. Services can be divided into commercial, cultural and administrative. They also fall into two categories: *Local* services cater chiefly for the townspeople; *centralised* services are concentrated in towns to serve a widely scattered clientele as well as the townspeople. Research is needed into the localisation of centralised services, since they are as important as localisation of industry in determining the distribution of settlement and are probably more vital in the structure of community life.

It has been observed but not explained that towns of different

sizes are spaced fairly equally over the face of the land. It is clear that certain laws, appertaining to the distribution of centralised services, must govern this basic distribution of towns. These services range from the local retailers who must be within a few minutes journey of their clients to services of an occasional character (high class furniture or a main branch of an insurance office) which require fewer centres placed in large cities. Before the Industrial Revolution, the market town was the seat of services for an area within an hour's journey by road—3–4 miles. Within the last 100 years the number and complexity of centralised services and growth of industry and population have caused the concentration of such services in fewer and fewer centres.

Walther Christaller has developed this theme on a theoretical basis, with the market town with a service radius of  $2\frac{1}{2}$ – $3\frac{1}{2}$  miles as a unit area, and has drawn up a scheme of distribution of centralised services which is closely borne out by the facts of town size and distribution in South Germany.

<i>Grades of town</i>	<i>Population</i>	<i>Service area</i>	
		<i>Radius (miles)</i>	<i>Area (sq. miles)</i>
1	800	$2\frac{1}{2}$ to 3	17
2	1,500	$7\frac{1}{2}$	54
3	3,500	14	160
4	9,000	$22\frac{1}{2}$	480
5	27,000	$38\frac{1}{2}$	1,500
6	90,000	$67\frac{1}{2}$	4,300
7	300,000	112	13,000

This fundamental and universal control of the functional character, distribution and size of towns is only one determinant factor of the urban complex. Even in areas not greatly affected by the growth of industry, it is counterbalanced by contours, routes, river crossings and mediaeval political conditions. It should also be noted that varying density of population does not appreciably affect spacing of towns, since the need of their services is universal. But it does affect their size.

DICKINSON, ROBERT E. *National planning and the social sciences. Town Planning Institute Journal Vol. xxvii No. 4 1941 pp. 114–117 (S)*

**Design and layout of villages**

'... the country town or the village, in the English tradition at any rate, is a closely-knit group of buildings. It is well, indeed, that it should be so; that it should in its physically closely-knit character symbolise the socially co-operative basis of the group of people it houses. We suggest that in the building of new small towns and villages and in the remodelling of old towns and villages which we hope will be undertaken, this close-knit character should be maintained. The country towns should be as compact as the requirements of healthy living will permit. The villages should ... be of the "enclosed" rather than of the "roadside" type. Thus the village buildings should be situated round a green or a series of greens in a pattern which is capable of natural expansion. ...

'A village plan as well as a town plan should have a carefully ordered shape: and a village as well as a town may well have some degree of formality. Certainly to attempt to recreate in new villages the irregularity and "quaintnesses" which are found in so many old ones is a mistaken policy. ... Village planning is by no means an easy art: it is full of subtleties concerning scale and character.'

*Ministry of Works and Planning. Committee on Land Utilisation in Rural Areas. Report (the Scott report). Cmd. 6378 1942 para. 205 (E)*

**TRANSPORT****Daily travel to work in London area**

'As a distinguished economist has remarked, "the possibility of severing work-place from dwelling-place is a very important social fact". It is a social fact which has long been of immense practical importance in London, where severance of work-place from dwelling-place has taken place to a degree unparalleled elsewhere in Gt. Britain.

'From information as to the relationships between residences and work-places which was obtained in the Census of Population of 1921 it appears that out of a total of about 2,685,000 persons working in the County of London, 608,000 or 22.6 per cent. came from without the county, namely 475,000 from Outer London and 133,000 from beyond Greater London. Of the 2,174,000 occupied persons resident in the County of London, 97,000 or 4.4 per cent. went outside the county to work, 68,000 going to outer London and 29,000 beyond Greater London. Of the 542,162 residents in Essex, Hertfordshire, Kent, Middlesex and Surrey who came to the County of London to

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work, 48 per cent. had work-places in the City of London or the City of Westminster.

'The London Passenger Transport Board supplied . . . the following statement, which was also compiled from the information collected in the Census of 1921, showing that persons working in Central London (the Cities of London and Westminster and the Metropolitan boroughs of Holborn, St. Marylebone, Finsbury and Southwark) but residing elsewhere in the County of London, or in Essex, Hertfordshire, Kent, Middlesex or Surrey, resided in the following zones :

<i>Zone</i>	<i>Number of persons</i>	<i>Distribution per cent</i>	<i>Persons in column (1) as percentage of occupied persons resident in Zone</i>
	(1)	(2)	(3)
Within 5 miles of Charing Cross - -	424,000 (a)	50	28
Within 10 miles and beyond 5 miles -	345,000 (a)	41	24
Within 15 miles and beyond 10 miles -	32,000 (a)	4	14
Beyond 15 miles - -	47,000 (a)	5	5
Total in counties of London, Essex, Hertfordshire, Kent, Middlesex, and Surrey -	848,000 (a)	100	21

'(a) The Census of 1921 was taken in June. Persons working in Central London but enumerated at holiday resorts outside the counties mentioned are excluded from these figures.

'The foregoing figures are now 18 years old. When the information on which they are based was collected the enormous amount of housebuilding which has proceeded in the Metropolitan area since the 1914-18 war was only at its beginning. Since 1st January, 1919, no fewer than 853,000 houses have been built in Greater London. Of that number only 179,000 have been built within Inner London. The total number of houses built in London and the Home Counties in the same period is 1,279,000 or 30 per cent. of the total number



built in the whole of Gt. Britain. Relatively few of these houses were built by 1921.

'... The London Passenger Transport Board suggest that the centripetal movement of the population of London may amount to roundly 1,700,000 persons for every working day, representing almost a third of the total passenger movement.'

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 paras. 353-356 (E)*

### Main factors concerning daily travel to work

The most marked movement is from dormitories on the fringe of towns to central work-places, an outstanding example being the City of London, which 'regularly expands and contracts between an insignificant night population of 13,709 and the more than thirty times as large a number of 436,721 during the day'. [Census, 1921.] There are, however, multifarious cross-currents and counter-currents of various volume. *Cross-currents* are most conspicuous where there are several industrial centres within daily travelling distance as in Lancashire, Yorkshire and the Midlands, but they also occur in large cities. *Counter-currents*: in large towns which attract labour from outlying suburbs, there are at the same time centrifugal movements, and even in small towns influx and exodus can be considerable, e.g. Chatham which had, in 1921, 3,416 inhabitants working elsewhere against 3,905 coming in to work.

What are the forces behind these daily movements? They are partly topographic and partly economic and social.

There is an increasing separation of residential and business and industrial districts. Inhabitants of dormitory suburbs travel to work as a matter of course and factories are being set up in more or less isolated localities. Housing policy between the wars has by its low density standards frequently placed the homes of the people miles away from their work and would have been impracticable without an elaborate transport system. New factories placed on the outskirts of towns have increased travelling from old central residential areas. There has been little attempt to correlate home and work-place. Both in London and Glasgow large new housing estates were built on one side of the city while new factories were built on another.

The social and economic importance of the daily journey lies chiefly in its contribution to the mobility of labour. Flexibility of the economic structure is aided and the labour market is widened with advantage to employers and employed. Large scale manufacture would be almost impossible if, say, the 20,000 employees of a large

engineering works had to be provided, together with their families with housing and services in the immediate vicinity of the works. In America 'company towns' exist where housing and almost all services and amenities are provided by the one company on which the inhabitants depend for employment and this solution has been found socially undesirable. From both workers' and employers' viewpoints, firms' housing schemes constitute possible causes of friction in industrial relations.

A factor which limits the worker's freedom of choice of a dwelling place should, however, be mentioned. In the inter-war period local authorities were almost the only providers of houses for poorer persons. This housing has tended to be concentrated in a few large estates, and the new houses to be reserved for people who have previously been living in the area of the local authority which built them. This handicaps migration between towns and even between London boroughs.

The daily journey's contribution to mobility of labour is especially in the process of economic change as exemplified in expansion and decline of industry, short-distance migration of factories, seasonal fluctuations and general labour turnover.

New and expanding works commonly have high proportions of their workers travelling considerable distances, whereas old-established firms have more local recruitment. In many cases it would be impossible for a new factory to delay the start of production until housing accommodation was available nearby for its workers.

Continuity of residence is usually desirable both from private and community viewpoints. Full ownership and the hire purchase scheme also bind a man to his house. Both factors restrict mobility of labour.

Daily travelling acts as a shock absorber in cases of seasonable fluctuation of employment and depression in a single industry or closing of an individual factory. It also helps to preserve the family unit by enabling those members of a family who cannot find work nearby to travel some distance to find it while still living at home. In the Survey Area of the *New Survey of London Life and Labour* it was found, in 1929, that for every ten principal earners (mostly male householders) there were over seven earners other than the householder (mostly sons and daughters); in other words, 41·8 per cent. of all earners living with their families could not move their home to the neighbourhood of their work. The varied employment of members of a family strengthens its social security and broadens its outlook and interest.

Broadly speaking it is left to the two parties in industry, and chiefly to the workers, to pay the cost of workers' transport to and from work. To some extent, however, the community is concerned; cheap travelling has been found essential to industrial development, and workmen's tickets, which are not commercially profitable to the

railway companies, have been introduced. Nearly one-fifth of all passenger journeys on British railways are made on workmen's tickets. In the London Transport Area, in the year ended 30th June, 1939, workmen's tickets amounted to 23.6 per cent. of all local journeys on the main railways and between 14 and 17 per cent. on L.P.T.B. railways, trains and trolley-buses; on motor buses, which carry half the total passengers, such tickets are not issued.

Employers do not usually share directly in the expense of workers' journeys but are indirectly much concerned. Higher wages in large towns are partly caused by higher travelling expenses. Subsidies are sometimes paid to workers when a factory is moved to a place which entails longer journeys for employees.

Little is known about actual cost of travelling to employees, and not even an estimate can be made of those who are free of all expense. Cycling is a cheap form of transport and it is estimated that eight million bicycles are used in summer and four million in winter. Not all of these are used for travelling to work, but it is safe to say that cost of travelling to work by public conveyance would be much higher if bicycles were not widely used. Bicycles are probably used much more in the country and smaller towns than in large cities.

Investigations show a wide divergence in amount of fares paid daily—ranging from 1d. to well over 1s. Variation occurs not only between localities but between employees of a single firm and the earning inhabitants of a single place or district. Variation also occurs in relative costs of travelling to work; the amount of fares paid does not vary in proportion to earnings. In this matter there is a notable difference between the position of primary and secondary earners in a family. The main breadwinner cannot spend more on fares than would leave, at the least, a bare subsistence. This limit is not effective with secondary earners, particularly juveniles and women; fares often absorb substantial proportions of these earners' wages.

It is therefore the ratio of total family expenditure on fares to total family income which is important in assessing cost of travelling to work. Very little is known about this. A Ministry of Labour figure [1937–38] of 1.8 per cent. may be correct for the country as a whole, but is almost certainly an underestimate for those areas where travelling to work is general. On the other hand an estimate, based on 1936–7 figures for the London Transport Area and included in the Barlow Report, suggested that total travelling costs amounted to about 8 per cent. of the average income of working class families. This is certainly an over-estimate.

It has been held that greater expenditure on travelling is compensated for by lower expenditure on rents. Evidence of equal weight supports and opposes this view and it cannot be held to be generally true.

The hardships of travelling to work have to be paid for in the three media of money, time and energy and are real but difficult to measure by a common yardstick. An unsuccessful attempt has been made to do so. Loss of time is perhaps the most obvious hardship and it is increased in many cases by the restricted hours during which workmen's tickets are available. The 30 minutes duration for a journey, which has been suggested as a maximum, is in many cases impracticable. The physical and nervous strain imposed by long journeys is very real, and more investigation of this problem is needed.

Measures of relief include the five-day week, staggering of hours to avoid rush-hour strain, transfer of employees between branches in suitable firms, and relaxation of time-keeping rules in certain cases. In the sphere of transport removal of restrictions on time of use of workmen's tickets would give much relief; use of such tickets could be restricted to those below a certain income level. Increased use of and provision for cycles and private cars would also be beneficial, as would relaxation of regulations which prevent several people sharing the cost of a private car.

The problem of travelling to work has been accentuated by increasing severance of work-place and place of residence during the last few decades. The City of London is an outstanding example and the same shrivelling of the many-sided functions of a complete town into a few connected with industry and business is perceptible elsewhere. In some new developments the severance has been complete from the start: Trafford Park trading estate has 50,000 workers but only about 700 houses for key maintenance men, while on Becontree dormitory estate the bulk of the active members of its 120,000 population travel away to work. The problems raised by this severance are just beginning to be tackled—notably in the recognition of the need for 'community centres' and encouragement of communal feeling in the new dormitory developments. Other possible remedies are the granting of local government status to new dormitory developments and encouragement of social activities around the work place as well as the place of residence.

Low density housing development around cities during the inter-war period has also added to the length of journeys and hindered development of communal feeling and facilities in the new estates. There seems evidence that the policy of open development continuously over large areas should be reconsidered, and that nucleated developments of a fairly compact kind, interspersed with open spaces or 'green wedges' penetrating towards the centre of the town, could possess all the advantages and escape some of the drawbacks of inter-war housing estates.

# TRANSPORT

## SYNOPSIS OF TRANSPORT CONDITIONS AFFECTING INDUSTRIAL WELFARE

<i>Firms (names omitted) and industry</i>	<i>County or Town</i>	<i>Total Employees (= 100)</i>	<i>Females</i>
1	2	3	4
1. Wool combing - - - -	Yorkshire	344	25.6
2. Electrical engineers - - - -	Liverpool	4,223	45.4
3. Carton manufacture - - - -	Birmingham	370	62.2
4. Belting manufacture - - - -	Yorkshire	325	38.4
5. Shoe machinery manufacture - - - -	Leicester	3,000	—
6. Paper manufacture - - - -	Staffordshire	427	18.7
7. Clothing manufacture - - - -	Leeds	9,572	24.4
8. Polish manufacture - - - -	London	1,004	67.6
9. Playing cards manufacture - - - -	Leeds	498	55.4
10. Stores - - - -	Liverpool	over 1,000	—
11. Soap manufacture - - - -	Lancashire	2,402	24.7
12. Aircraft manufacture - - - -	Home Counties	1,746	11.3
13. Stationery manufacture - - - -	Hertfordshire	4,565	49.5
14. Rubber manufacture - - - -	Birmingham	6,100	32.9
15. Office staff of cement works - - - -	Wilmington, Hull	214	38.3
16. Electrical engineers - - - -	Bedfordshire	1,000	—
17. Textile manufacture - - - -	Yorkshire	1,300	—
18. Wool combing - - - -	Staffordshire	315	52.4
19. Department stores - - - -	London	5,935	47.4
20. Soap manufacture - - - -	Trafford Park Manchester	265	38.8
21. Ball bearing manufacture - - - -	Essex	3,543	36.6
22. Electrical engineers - - - -	Middlesex	1,265	32.2
23. Brush manufacture - - - -	Bristol	270	34.4
24. Photograph manufacture - - - -	Middlesex	2,496	29.0
25. Engineering - - - -	Gloucester	2,200	4.1
26. Engineering - - - -	Surrey	804	31.4
27. Textile manufacture - - - -	Leeds	389	6.8
28. Starch manufacture - - - -	Hull	2,158	55.8
29. Engineering - - - -	Manchester	1,600	44.3
30. Woollen clothing - - - -	Leicester	—	66.6
31. Cleaners and Dyers - - - -	London	782	65.7
32. Chemical works - - - -	Lancashire	199	1.5
33. Cable works - - - -	London	4,124	42.7
34. Shoe manufacture - - - -	Leicester	529	30.0
35. Co-operative - - - -	Lancashire	—	—
36. Motor accessories manufacture - - - -	Birmingham	1,101	30.3

(a) Probably including some who take lunch in cafes, etc., near the works.

(b) Of the day shift. (c) Motor cycle and private car. (d) Including car.

# TRANSPORT

THE EMPLOYEES OF 36 MEMBER FIRMS OF THE  
SOCIETY, 1936

Percentages. Column 3 = 100						Going home for lunch (a)
Main method of transport			Duration of journey in hours			
Walk 5	Bicycle 6	Train, bus, Tram 7	Under $\frac{1}{2}$ 8	$\frac{1}{2}$ and under 1 9	1 and over 10	
62.5	9.3	28.2	71.2	28.8		12-15 (b)
22.5	{ 20.1	56.0	91.4	5.9	2.7	65
	{ 1.4 (c)					
10.8	37.8	51.4	85.0	15.0	—	49
51.7	12.3 (d)	36.0	93.0	6.7	0.3	55
50.0	30.0	20.0	70.0	25.0	5.0	90
—	10.0	—	57.1	38.4	4.5	25
—	—	—	—	—	—	30
48.8	{ 14.2	33.5	78.0	19.5	2.5	—
	{ 3.5 (c)					
—	('quite a few')	—	Most live within 2d. bus ride from the town centre			50
—	('only a small percentage of the males')	—				—
47.4	14.6	38.0	93.0	6.5	0.5	54
23.5	{ 25.3	39.4	58.0	17.7	24.3	46
	{ 11.8 (c)					
20.5	—	—	68.0	31.9	0.1	50
—	{ 35.7	—	—	—	—	40
4.6	{ 1.6 (c)					
	{ 57.9	31.1	—	—	—	85
	{ 6.4 (c)					
20.0	40-50	30-40	—	—	—	—
Majority	11.5	—	99.0	1.0	—	69
62.8	5.2	32.0	—	—	—	56
—	7.3	—	—	—	—	Less than 5
1.5	43.8 (d)	54.7	11.3	79.3	9.4	2
51.7	42.3	6.5	—	—	—	80
—	—	30.0	—	—	—	24
11.1	21.1	67.8	89.3	10.0	0.7	26
—	—	—	—	—	—	80
48.6	29.6	21.8	60.0	30.0	10.0	45
under 10	42.3	over 50	—	—	—	20
69.9	3.1	27.0	94.0	6.0	—	23
23.2	31.0	45.8	97.0	2.7	0.3	74
15.0	27.0	58.0	30.0	60.0	10.0	47
—	'vast number'	—	—	—	—	75
21.2 (f)	13.4	53.5	33.1 (f)	39.0	16	20
16.5	60.0	23.5	87.0	11.0	2.0	28
15.1	12.8	72.1	30.0	60.0	10.0	15-20
71.5	18.1	10.0	98.0	2.0	—	94
—	25.0	—	—	—	—	80
28.0	36.0	36.0	28.0	72.0	—	27

(e) 5.3 motor-cycle, 6.5 private car. (f) + 11.9 without answer; probably under  $\frac{1}{2}$  hour.

LIEPMANN, KATE K. *The journey to work. 1944 (S)*

TRANSPORT  
TRAVEL CONDITIONS ON L.C.C. ESTATES

	<i>Householders</i>			
	<i>Cottage Estates</i>			
	<i>Becontree</i>		<i>St. Helier</i>	
	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>
A. Total Householders* - -	22,862	100	8,005	100
Of these worked				
within 2 miles - - -	6,962	30.5	1,605	20.1
2 to 5 miles - - -	6,317	27.6	1,306	16.3
Over 5 miles - - -	9,583	41.9	5,094	63.5
B. Total Householders* - -	23,924	100	8,105	100
Of these paid				
No fares† - - -	2,169	9.1	692	8.5
1s. or under - - -	2,236	9.3	392	4.9
1s. to 2s. - - -	1,523	6.3	413	5.1
2s. to 3s. - - -	2,065	8.7	606	7.5
Total up to 3s. - -	5,824	24.3	1,411	17.5
3s. to 4s. - - -	2,043	8.5	996	12.2
4s. to 5s. - - -	3,022	12.7	1,755	21.7
5s. to 6s. - - -	3,969	16.6	1,518	18.8
Total over 3s. to 6s. -	9,034	37.8	4,269	52.7
6s. to 7s. - - -	3,254	13.6	912	11.2
7s. to 8s. - - -	1,903	7.9	431	5.3
8s. to 9s. - - -	827	3.5	206	2.6
9s. to 10s. - - -	480	2.0	107	1.3
Over 10s. - - -	433	1.8	77	0.9
Total over 6s. - -	6,897	28.8	1,733	21.3

**Effect of cessation of transport facilities**

An enquiry into the effect of the withdrawal of the Green Line Coach services, just concluded by London Transport, has revealed that about one half of the people who used it have ceased to travel.

The services ceased to operate on 29th September, 1942, and the recent enquiry was prompted by the approach of Easter, when, in normal circumstances, thousands of Londoners visit the countryside. The result surprised even those who made the enquiry, for they found that of every 100 former travellers by Green Line at least 50 had stopped travelling altogether. Thus the axiom of traffic experts that traffic facilities created traffic was proved. The coaches provided town and country dwellers with a speedy and convenient means of travel between points where facilities did not previously exist.

*The Times 5th April 1944 (S)*

# TRANSPORT

Table continued from p. 360

living in

Others		Total		Block Dwellings		Total of all L.C.C. Estates	
Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
A. DISTANCE							
16,783	100	47,650	100	14,671	100	62,321	100
4,881	29.0	13,448	28.2	9,946	67.8	23,394	37.6
6,371	38.0	13,994	29.4	4,041	27.5	18,035	28.9
5,631	33.0	20,208	42.4	684	4.7	20,892	33.5
B. WEEKLY	FARES						
18,050	100	50,079	100	15,570	100	65,649	100
3,741	20.8	6,602	13.1	4,276	27.5	10,878	16.5
405	2.2	3,033	6.1	1,246	8.0	4,279	6.5
1,745	9.6	3,681	7.4	2,986	19.2	6,667	10.2
2,486	13.8	5,157	10.3	3,321	21.3	8,478	12.9
4,636	25.6	11,871	23.8	7,553	48.5	19,424	29.6
3,188	17.7	6,227	12.4	1,961	12.6	8,188	12.5
2,804	15.5	7,581	15.2	894	5.8	8,475	12.9
1,840	10.2	7,327	14.6	411	2.6	7,738	11.8
7,832	43.4	21,135	42.2	3,266	21.0	24,401	37.2
1,032	5.7	5,198	10.4	239	1.5	5,437	8.3
438	2.5	2,772	5.5	95	0.6	2,867	4.4
147	0.8	1,180	2.4	47	0.3	1,227	1.9
118	0.6	705	1.4	44	0.3	749	1.1
106	0.6	616	1.2	50	0.3	666	1.0
1,841	10.2	10,471	20.9	475	3.0	10,946	16.7

\* Excluding unemployed householders and those giving no information. Returns were received from about 80 per cent. of all tenants.

† Working locally, cycling to work, using free railway passes.

LIEPMANN, KATE K. *The journey to work*. 1944 (E)

## Distance and cost of travel to work

'It is estimated that the average distance travelled per passenger journey on railways in Greater London now controlled by the London Passenger Transport Board increased from 3.9 miles in 1924 to 4.44 miles in 1932. For the wider London Passenger Transport Area the average distance travelled per passenger journey in 1935-36 was 4.5 miles. The expenditure on transport by public conveyances within the London Passenger Transport Area, has been estimated at approximately £15 per family per annum, or about 8 per cent. of the average



# TRANSPORT

income of working-class families in London. In Birmingham in 1936 the cost of transport is said to have represented, on average, an expenditure of £8 17s. per family per annum.'

*Royal Commission on the Distribution of the Industrial Population. Report (the Barlow report). Cmd. 6153 1940 para. 138 (E)*

## Duration of daily travel to work

'Duration of journey to work in New York. Principal income earners only. From *Real Property Inventory of New York City, 1934.*'

Time needed to travel to work, in minutes	Percentage of total of those families which reported					Total for New York City
	Manhattan	Bronx	Brooklyn	Queens	Richmond	
0-19	31	15	20	19	28	22
20-39	49	28	38	27	32	35
40-59	15	27	24	20	7	19
60 and more	5	30	18	34	33	24
Total population. Thousands	1,724	1,295	2,550	1,144	160	6,874

LIEPMANN, KATE K. *The journey to work.* 1944 p. 120 (E)

# UNDERGROUND SERVICES

## Location of underground services

The Joint Committee was appointed in April, 1945, to draw up notes for the use of engineers on the best location of underground services.

The reports deals primarily with services in urban areas; the principal utility services concerned were electricity, gas, water, telecommunications, public lighting, and sewers. District heating may be a development in the future and provision for it in a conduit beneath the verge or carriageway will probably be necessary.

Hitherto there has been no general standard for the location of the various services.

Experience has shown that the facilities required by the different utility companies in order to instal and maintain their services vary, and such facilities, taken as a whole, can best be provided when the services are laid in a certain order. It is accordingly desirable that this order should be generally adopted. Further, the location of mains and services should cause the minimum of interference with traffic; they should accordingly be laid whenever possible under the footway or verge rather than the carriageway.

In the following recommendations it is assumed that in new towns and in road improvements in existing towns, adequate footway and verge space will be provided.

### *Local distribution mains*

In general a width of not less than 10 feet 6 inches on both sides of the street provides for an orderly layout of distribution mains and services.

We recommend that the mains should be laid in the following order from the highway boundary to the kerb line:

- (i) (nearest the boundary) Electricity.
- (ii) Gas.
- (iii) Water.
- (iv) (nearest the kerb) Telecommunications.

The cover required for the various mains ranges from 14 inches for telecommunications to 3 feet for water. Electricity and telecommunications require increased cover when laid under carriageways.

### *Transmission or Trunk Mains*

It is not possible to make any general recommendation concerning the layout of transmission or trunk mains. These are likely to be laid only in a small proportion of streets, and not always main streets.

New transmission or trunk mains should be laid in streets of minor traffic value.

*Service Subways*

From time to time the use of service subways in heavily trafficked areas has been advocated. Such subways would be needed on both sides of the street with adequate cross connections, and special attention would have to be paid to the provision of working space for the introduction of pipes into the subway and for repairs; also to ventilation, lighting, flood bulkheads, and so on.

Service subways have considerable drawbacks which must be set against their advantages, and it is recommended that normally their use should be confined to crossings under the carriageway at major traffic intersections.

*Sewers*

Sewers cannot be made to conform to rules of location as they are normally constructed in straight lines between manholes, and may therefore cross and recross the carriageway and even the footways and verges. Furthermore their depth may have no regard to local surface levels. When there is any conflict with other services, sewers must usually be granted priority; they should therefore be kept clear of the reservations for other services, and in most roads will be under the carriageway. Properly constructed sewers rarely need to be uncovered after they have been laid.

When a sewer is laid in the carriageway, the total length of pipe beneath the paved surface is much increased by branch connections. This is no drawback once the connections have been made, as they will rarely require to be uncovered. But often connections have to be made after the roadway has been constructed, and in important traffic roads duplication of sewers may sometimes be justifiable in order to minimise interference with traffic and disturbance of paved surfaces.

*Tree planting*

The planting of kerbside trees should be discontinued unless wide verges can be provided.

Large trees should not be planted in city streets, not only because of their height but because their roots damage services.

*Co-ordination of work and plans*

The underground works of the various statutory bodies should be co-ordinated, and it is recommended that the engineer to the highway authority should be given this responsibility. Each utility undertaking should keep detailed records of work done on 1/1,250 scale plans, or 1/500 scale plans in congested areas. These plans should be kept up to date.

*Institutions of Civil Engineers and Municipal and County Engineers. Joint Committee. Report. The location of underground services. 1946 (S)*

## URBAN REDEVELOPMENT

### Comments on redevelopment proposals for the city of London

What the Royal Fine Art Commission chiefly look for in the road proposals, is a plan which combines ready access for occupiers of premises with improved opportunities for architectural development of the resulting building blocks.

One of the most remarkable features of Wren's Plan of London after the Great Fire was the carefully designed arrangement of building blocks to provide good frontages and convenient depth of site for buildings. The present Proposals do not appear to envisage any marked improvement in the size, shape and alignment of building blocks: in many cases proposed street improvements and roundabouts result in plan shapes on which no architect could hope to design a successful and convenient building. Many of the widened main streets create awkward junctions with narrow streets and alleys, and call for rearrangement, and possibly the elimination of some of the small streets so affected. It is in fact in the planning of the shapes of intersections of widened streets and new streets that the Commission regard the Proposals\* as falling very far short of what is desirable.

The Commission have always agreed in principle on the necessity for control of height, particularly in the region of St. Paul's, and between St. Paul's and the river. They now feel, however, that the pre-war proposals should be considerably amended to meet a new situation, in respect, for example, of the buildings on either side of Queen Victoria Street, south of St. Paul's. Moreover, if building up to the maximum by-law height allowed is open to owners, and even possibly enjoined on them in any part of the City except near St. Pauls, the tendency will be for frontages to be erected on the most favourable sites to a height of 80 feet with two floors in the roof, and for back land to be less advantageously developed.

The Commission fully realise the difficulty of devising and imposing a new form of control on owners; but they feel strongly that a lead should be given by the Corporation, so as to ensure proper replanning of entire City blocks to be undertaken, in vertical section as well as in plan. While there seems no need for a violent breakaway from the existing layout, the Commission suggest that greater thought should be given to the method of development of the back land enclosed by small streets and alleys. Redevelopment—in some cases over a period of years—could be carried out in such a way as to improve the lighting of the offices, their protection against fire, and the

\* The plan which is the subject of this note is the *Preliminary Draft Proposals for Reconstruction in the City of London*, being a report by the Improvements and Town Planning Committee in 1944.

architectural composition of the block, and yet so as to maintain—and even increase—the amount of usable floor space. These improvements will be largely negated by allowing a maximum height on the street frontage and the perpetuation of small courts behind. It is suggested that the Corporation should demonstrate what forms of zoning would be considered for typical blocks in the war-damaged sections of the City, so as to provide floor space greater than that existing before the war, improved day-lighting, facilities for car parking and garaging, and façades to the street—particularly on minor roads—of three or four storeys instead of seven or eight. Powers for the acquisition, redevelopment and releasing of office blocks are contained in the Town and Country Planning Act, 1944.

The Scheme, as published, does not indicate that the principle of Period planning has been adopted or worked to. In its simplest form, period planning might be said to distinguish between long term and short term proposals; but the subdivisions may, and usually will, be more numerous. One of the objects of such periodic presentation of a complete scheme is to encourage owners and the public to visualise the gradual attainment of a bold scheme of reconstruction, even when it contains features which it does not seem practicable to carry out for some years.

On the other hand, the skill of the planner is used to show that realisation of the first stages of the scheme will be useful in itself; if this is so, flexibility in the later stages will be possible without nullifying the usefulness of the earlier. And each stage gives an opportunity for constructive amendment, while building upwards towards an ultimately improved picture.

The Commission agree in principle with the opinion expressed in the Report that small open spaces are more suited to the use and character of the City than large ones. It is not possible at this stage to forecast what contribution to the total area of open space will be made by redevelopments of individual buildings and blocks. They recommend that space in traffic roundabouts, which is of little use, should be discounted, and a slight increase obtained in certain [stated] areas. In addition, the Commission recommend a footpath survey and plan, with the object of linking open spaces with disused burial grounds, churchyards and monuments to which the public have access, the Tower Wall at Cripplegate, and historic buildings.

*Royal Fine Art Commission. Observations on the city of London's report on post-war reconstruction. 1945 (S)*

# WAR CASUALTIES

## Strength and casualties of the armed forces and civil defence services, 1939-1945

On 31st August, 1939, the total strength of the armed forces was 681,000. Between then and 30th June, 1945, another 5,215,000 were taken into the services. Of this total of 5,896,000 men, 923,000 served in the Royal Navy, 3,788,000 in the Army, and 1,185,000 in the R.A.F. The peak figure was 4,683,000 in June 1945.

The women's auxiliary services began the war with 21,000 and during the same subsequent period 619,000 more women were taken in, making a total of 640,000: 86,000 in the W.R.N.S., 307,000 in the A.T.S., 219,000 in the W.A.A.F., and 28,000 in the nursing services.

The figures for June 1944, the peak of mobilisation (though this was not reached in the armed forces till a year later) were:

MEN				WOMEN			
<i>Armed Forces</i>				<i>Auxiliary Services</i>			
			<i>Thousands</i>				<i>Thousands</i>
Royal Navy -	-	-	790	W.R.N.S. -	-	-	74
Army -	-	-	2,742	A.T.S. -	-	-	199
Royal Air Force -	-	-	1,012	W.A.A.F. -	-	-	174
				Nursing Services -	-	-	19
<hr/>				<hr/>			
Total -	-	-	4,544	Total -	-	-	466
<hr/>				<hr/>			
<i>Other Services</i>				<i>Other Services</i>			
Whole-time:				Whole-time:			
Civil Defence -	-	-	231	Civil Defence -	-	-	58
Merchant Navy -	-	-	180	R. Observer Corps -	-	-	3
R. Observer Corps -	-	-	6				
<hr/>				<hr/>			
Total -	-	-	417	Total -	-	-	61
<hr/>				<hr/>			
Part-time:				Part-time:			
Civil Defence -	-	-	1,253	Civil Defence -	-	-	358
R. Observer Corps -	-	-	22	R. Observer Corps -	-	-	2
Home Guard -	-	-	1,727	Home Guard -	-	-	31
<hr/>				<hr/>			
Total -	-	-	3,002	Total -	-	-	391

The United Kingdom lost 357,116 killed in the war: 264,443 in the armed forces, 624 in the women's auxiliary services, 1,206 in the

Home Guard, 30,248 in the merchant navy and fishing fleet, and 60,595 civilians.

When missing, wounded, prisoners of war, etc., are added the casualties total 950,794.

The Royal Navy suffered 73,642 casualties. The Army 569,501, and the R.A.F. 112,296.

The statistics are, of course, those of the United Kingdom, not the Commonwealth, and the majority of the losses suffered against Japan were Indian. It is estimated, however, that 10,000,000 men served in the Commonwealth armed forces.

*The Times 7th June 1946 (S)*

## WAR MEMORIALS

### Recommendations

In April 1944 the Royal Society of Arts convened a conference to stress the need for a high standard of artistic merit and social and cultural value in the memorials of the present war. As a result of the conference the Royal Society of Arts set up a War Memorials Sub-Committee, co-opting members of other interested societies, to consider the subject further and make recommendations. In September, 1944, these recommendations were submitted to the inaugural meeting of the War Memorials Advisory Council, a body representing a large number of societies and individuals distinguished in public affairs and the arts. By this Council, which will remain in being for the guidance of local committees, the following recommendations were adopted:

The Council's primary recommendation is that a well-designed permanent record of the names of those who died should be kept in easily accessible places. This may be done either by an inscription or on vellum in a Book of Remembrance. On some 1914-18 war memorials names can now only be read with difficulty.

It is probable that larger sums will be raised than are necessary for a record of names alone and that further memorials will be possible. The Council consider it highly desirable that it should always be easy to distinguish a war memorial from that which is not a war memorial. It follows that where the memorial takes the form of a monument, it should not be a standardised article of commerce but the creation of an artist well acquainted with, or prepared to study, the sentiments of the community and the proposed site. Where the memorial takes the form of a socially valuable project, it should meet a permanent and not a temporary need and should not provide facilities which national or local government will in any case provide. Finally, memorials

## WAR MEMORIALS

should be obviously and unmistakably war memorials. To achieve this last aim the Council recommends that each record of names should contain a reference to any other form that the memorial takes; that any land or building dedicated as a war memorial should contain a group of sculpture, or relief panel in stone or metal, or inscribed doors or gates; and that an annual memorial service should be held at the site of the memorial.

Among the projects of social service which the Council considers suitable for choice as war memorials are the following: gardens of memory, parks and open spaces, groups of memorial trees, acquisition of hill-tops or view-points, playing fields and childrens' playgrounds, acquisition of buildings of historic interest or architectural merit; community centres and village halls; hospitals and other health organisations. The Council stresses the supreme importance of good design in all projects, and also the importance of obtaining the best professional advice. It also emphasises the importance of providing for the proper and permanent maintenance of war memorials. The condition of many 1914-18 war memorials is very unsatisfactory from this point of view.

*Royal Society of Arts. War Memorials Sub-Committee. War memorials. 1944 (S)*

## WATER

### Water consumption in new towns

Water consumption per head in a new town will be high. At Welwyn during the dry summer of this year [1929], the average daily consumption per head was 57 gallons, including about 19 gallons for industrial purposes. Greatest consumption in one day was 77 gallons per head, including about 27 for industry. Much of this was doubtless used in gardens, but in a town where every house has a bath, 1 or 2 w.c.'s and a garden, and unrestricted use of water, demand will be large. There appears to be a general tendency to use more water in the home, and many American cities far exceed the Welwyn figures.

The following figures are for estimated daily consumption per head in Letchworth (for domestic consumption only—industrial supplies, which are very high, being excluded):

Year ending Sept., 1927	-	29.5	gallons
"    "    "    1928	-	31.5	"
Dec. Quarter 1928	-	34.4	"
Mar.    "    1929	-	31.3	"
June    "    1929	-	36.8	"
Sept.    "    1929	-	39.5	"



The Metropolitan Water Board gives the gross consumption in the London area during the year 1928-29 as an average of 37 gallons per head per day rising to 42 gallons in the summer. These figures show an increase on previous years.

JAMES, W. E. *Engineering aspects of garden city development. Town Planning Institute Journal Vol. xvi No. 3 1930 p. 77 (S)*

### History of water supply; and Government policy, 1944

There is in the country ample water for all needs. The problem is one of organisation and distribution. Sources of supply vary from a small well to vast systems of impounding reservoirs and aqueducts costing several million pounds and taking ten years to construct. Demand grows constantly and new systems of supply are continually being constructed.

Water undertakers supply about 500,000 million gallons a year and spend £30 millions on running costs and about £10 millions on new works.

Water is costly to transport and therefore local sources must be used as much as possible.

The Government's proposals are largely based on the reports of the Central Advisory Water Committee.

The supply of wholesome water as a public service has a long history in this country. In its early days it was conducted largely by statutory companies but today about 80 per cent. of the water undertakings are municipally owned.

Hull was empowered to supply water by Royal Charter in 1447, and a well-known early project was London's New River (1613).

But it was long before public water supply services were at all general in our towns. Of the towns examined by a Royal Commission in 1844 only 6 had a service which could be called good, in 13 it was indifferent, and in 31 bad both in distribution and purity.

The Commission recommended that local authorities should be responsible for water supplies and drainage. From then on provision improved and the Public Health Acts of 1872-78 firmly place on sanitary authorities the duty of providing wholesome and sufficient water for the needs of their area.

But because it was one of our earliest public services, the service grew up when the unit of action was the parish or the town, long before there was any conception of a wider integration. The legislative framework is largely obsolete.

For a long time local sources met local needs but as cities grew they had to go further afield. By 1904, Manchester, Liverpool, and Bir-

mingham had brought into use sources 106, 68, and 74 miles away from the areas supplied; and many towns brought water over smaller but considerable distances.

The system of supply grew up piece-meal and there was overlapping and waste.

In 1924, the Ministry of Health began to encourage the formation of Regional Advisory Water Committees for important areas having a common water problem. There are now 9 of these committees covering the areas of 354 water undertakings. The Water Pollution Research Board of the Department of Scientific and Industrial Research was set up in 1927 to carry out research on prevention of the pollution of rivers and other sources of water supply by industrial effluents and sewage.

Three Acts of importance were passed in 1934, a year of almost unprecedented drought. Two—the Water Supplies (Exceptional Shortage Orders) Act; and the Rural Water Supplies Act—were temporary in character. The former enabled the Minister to take exceptional measures to combat a water shortage, and the latter provided £1,000,000 to stimulate the provision of water in rural areas. The third Act—the Supply of Water in Bulk Act—enables one water undertaking to supply another with a bulk supply.

In 1935, the Inland Water Survey was set up to collect and correlate records of surface and underground waters, and to encourage the keeping of records, etc.

In 1937 the Central Advisory Water Committee was set up and has published three reports.

The total amount of water flowing into rivers and streams and underground collecting areas is probably—after allowing for about a 40 per cent. loss by evaporation—about 15 times the present total consumption in England and Wales for domestic and industrial purposes.

The Government's proposals are based on three principles:

1. Adequate control of water supply services, but changes in the *status quo* to be made only where justified by greater efficiency.
2. Responsibility to rest with democratic bodies—Ministers and local authorities.
3. Sectional interests to be subordinate to the national interest, but all to have the right to be heard.

The main proposals are as follows:

1. The Health Ministers, whose powers are at present vague and ill-defined, to be given the statutory duty of promoting the provision of adequate water supplies and the conservation of water resources.
2. The central planning of water policy to be the function of the Health Ministers—this policy to be based on information which is

systematically collected and assessed. Application of the policy is to be by a simplified system of Ministerial orders.

3. The Central Advisory Water Committee to be reconstituted as a statutory body with wider terms of reference. A somewhat similar Committee to be set up for Scotland.

4. The work of the Inland Water Survey to be vigorously prosecuted.

5. Surveys of bulk needs of large areas to continue to be carried out in England and Wales by Regional Advisory Water Committees, which should be empowered to require information and statistics.

6. Surveys of efficiency of water supply services to be carried out regularly by the Ministry of Health.

7. Greater use to be made of the resources of other Departments—notably Agriculture and Fisheries and Town and Country Planning—in building up information. Close touch to be kept with Town and Country Planning policy.

8. Present powers and duties of local authorities and framework of water undertakers to be retained, but default powers of Ministers of Health to be strengthened.

9. Special steps to be taken to prevent misuse, waste, and pollution of water.

10. In advance of general legislation, a Bill to be presented to provide £15,000,000 in England and Wales and £6,375,000 in Scotland for extension of piped water supplies and sewerage in rural areas.

*Ministers of Health and Agriculture and Fisheries and Secretary of State for Scotland. A national water policy. Cmd. 6515 1944 (S)*

#### Water supply in rural areas

'A considerable extension of piped water supplies in rural areas was achieved as a result of the £1,000,000 Government grant made for this purpose under the Rural Water Supply Act, but in spite of this there was still a grave deficiency. In June, 1939, it was estimated that of the 11,186 parishes in England and Wales 3,432 were entirely without piped water supplies, and that at least one million, or one-seventh, of the rural population (i.e. those living in rural districts which includes many small towns as well as villages), were without piped water. Here again it was mostly the agricultural worker or the farmer living in an isolated cottage or farmhouse who had to go without.'

*Ministry of Works and Planning. Committee on Land Utilisation in Rural Areas. Report (the Scott report). Cmd. 6378 1942 para. 66 (E)*

# ZONING

## Definition of zoning

'Zoning is now generally understood to mean the legal control by some public body, within a specified area, of:

- (a) The user of the land and the character of buildings erected upon it;
- (b) The height of buildings;
- (c) The density of and space about buildings.'

*Council of the Town Planning Institute. Memorandum on zoning in built-up areas. Town Planning Institute Journal Vol. xi No. 10 1925 p. 243 (E)*

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